DOCUMENT RESUME

ED 162 283 CS 004 487

AUTHOR	Weaver, Phyllis; Shonkoff, Fredi
TITLE	Research Within Reach: A Research-Guided Response to Concerns of Reading Educators.
INSTITUTION	Central Midwestern Regional Educational Lab., St. Ann, Mo.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	78
NOTE	139p.
EDRS PRICE	MF-$0.83 HC-$7.35 Plus Postage.
DESCRIPTORS	Beginning Reading; Elementary Education; Literature Reviews; *Reading Comprehension; *Reading Difficulty; *Reading Instruction; *Reading Readiness; *Reading Research; *Reading Skills

ABSTRACT

In an attempt to find a new approach to making research applicable to the classroom, this book is organized around questions about reading instruction posed by a group of 14 teachers, supervisors, and administrators. The book contains 24 questions presented in the form of actual classroom situations. In order to clarify the question, each of these scenarios provides information about the context in which the problem arose. Each scenario is followed by a discussion which draws on research findings and professional experience; references recommended for additional reading on the topic are also included. The scenarios are divided into five categories: the nature of reading and its instruction, reading readiness, developing reading skill, reading comprehension, and difficulties in developing reading skill. (FL)

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ED162283

Research Within Reach

A Research-Guided Response to Concerns of Reading Educators

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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EDUCATION

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CS004487

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Washington, D.C. 20208

Published October 1978
Printed in the United States of America

The material in this publication was prepared under a grant with the National Institute of Education, U.S. Department of Health, Education and Welfare. Its contents do not necessarily reflect the views of the National Institute of Education or of any other agency of the United States Government.

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Foreword

Analyses of the relationship between theory and practice are not new—they have a history going back to Aristotle. But the increasing concern with the topic that has developed in recent decades has resulted in a number of visible changes. Perhaps the most notable is the large number of synthesis products, books that review the research literature and go on to draw implications for practice. When we ask teachers if they read these syntheses, they usually reply that they read a lot of them when they were in college but that they do not have time for them now and that these products do not really relate to what is going on in the classroom.

To a large extent, these teachers are right. Most synthesis products do not relate directly to the immediate concerns of classroom teachers and school administrators. Why? Perhaps because most attempts to summarize research literature have first asked, "What have researchers discovered?" and then, "What are the implications of these discoveries for practitioners?" The question of whether the work of the researchers addressed the immediate concerns and needs of practitioners usually has not been a primary consideration in these syntheses.

The approach used by the Research and Development Interpretation Service (RDIS), which is funded by the National Institute of Education and located at CEMREL, Inc., an educational laboratory, has been to reverse the usual sequence. RDIS began by interviewing teachers, supervisors, and administrators to discover substantive questions they wanted answered. These questions were then taken to carefully selected members of the research community. The information gathered from researchers was summarized and interpreted to provide the best answer research can currently offer. An extensive review process, involving additional members of the research community, was utilized to ensure comprehensive coverage of the research literature.

Research Within Reach: A Research-Guided Response to Concerns of Reading Educators is an interpretive report; it is not simply a summary of the research findings. While it is firmly grounded in the research literature, it interprets that literature so that a more focused and useful answer may be given to practitioner questions.

It is the hope of RDIS and of NIE that this report and others like it that will appear in the near future will contribute to the improvement of school practice in two ways. First, teachers and administrators will hopefully find in the report some guidance for the day-to-day decisions they must make and some understanding of the role research can play in the improvement of practice. Second, researchers who read the report may come away with a clearer picture of what practitioners need to know and what other researchers believe is the current state of knowledge in the area. And, because this report identifies gaps in the knowledge base which should perhaps be addressed by the research community, future research will hopefully be influenced by it.

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Preface

Harriet Doss Willis

Elementary school teachers and reading specialists are faced daily with the need to make complex instructional decisions. They are constantly looking for answers to specific problems or attempting to find an instructional approach that will work for a particular child or group of children. The means teachers use for solving their problems are varied. Frequently, they review the teacher's guides that accompany basal reading series or sets of supplementary materials, consult the curriculum guides developed and provided by the school district, and discuss their concerns or problems with co-workers. Occasionally, they consult their supervisory and support staffs.

The one source of information most teachers do not consult is the research literature—they feel that research activity is so far removed from the classroom that it will not help them solve their immediate instructional problems. And yet, since the turn of the century, more research has been done on reading than on any other curricular area.

Is the application of research to instructional practice important in the field of reading? Can the results of research be used to improve teaching? The answer to each of these questions is "yes," but if this is true, why is it that practitioners seem to automatically discount the usefulness of research literature? We can discover the reasons by looking at the nature of research and how research results are disseminated.

First, researchers traditionally have been reluctant to speculate about the educational implications of their work. Instead, the work they do often results in the need for further research. These extensions of the work typically take a closer, narrower look at the construct under investigation; thus, with successive refinements of the research, the results tend to get less and less generalizable, and certainly less practical.

Second, the size of the units of analysis in laboratory-based research are quite different from and appear incompatible with those of the classroom and even the clinic. Researchers study reading in terms of milli-seconds, letter features, and the duration of eye fixations—these are studied in tightly controlled conditions that are usually quite unlike reading in natural settings. On the other hand, the smallest unit of analysis in the classroom or clinic is probably the phoneme and its relation to graphemes. (We know the difficulty some children have with units this small!) Classroom teachers and specialists are concerned with whole reading/teaching methodologies, often with groups of children at a time, and they operate in relatively uncontrolled—in the statistical sense—environments. Thus it is not surprising that research results have been difficult to apply.

Finally, because the jargon, methodologies, and concerns of researchers and practitioners are usually so different, there has been an inadequate exchange of knowledge between the groups. The usual form for exchanging scholarly information is through journals and paper presentations at professional meetings. However, most practitioners do not read the *Journal of Verbal Learning and Verbal Behavior* or attend the annual meeting of the Psychonomic Society. Whatever usefulness could be made of basic research cannot be made unless it is received by practitioners.

There have, of course, been a number of attempts to synthesize and interpret research findings in the area of reading instruction. Most of these synthesis products—and some of them are highly respected—began with a review of the literature and moved from there to discuss classroom implications. Research and Development Interpretation Service (RDIS) project staff were not satisfied with that approach, as you will see.

How the Document Was Developed

We were not interested in simply reporting the results of a review of the research literature to reading educators. We worked hard to discover a process that would ensure the relevancy of the work we would be doing. We decided that the best way to do that would be to actually go to reading educators and ask them to describe for us their most pressing concerns and needs in relation to reading instruction.

We selected a group of 14 practitioners—classroom teachers, reading and curriculum specialists, and school administrators—with whom we had been associated and whose work we respected. We conducted telephone interviews with these practitioners, asking them to identify problems and questions about instruction in reading that they would like to see researchers address.

We didn't limit our interviewing process to classroom teachers, because we realize that there are many people who share in the responsibility for making decisions about reading instruction and learning. We interviewed five classroom teachers in five different locations in the country; two curriculum specialists with responsibilities for assisting elementary teachers in all subject areas; an ESEA Title I curriculum supervisor of a rural school district; a curriculum director from a large city district with responsibility for directing the planning and implementation of the district's total curriculum at all grade levels; an ESEA Title I program director of a large city school district; three elementary principals in three different locations in the country; and the superintendent of a large city school system.

Following are the questions that we asked:

1. Would you describe the problems or questions that you have concerning instruction in reading at the elementary level that you would like to see researchers address? Provide a brief description of the context in which the problem or question arises for you, that is, grade level, age of students, working with other school professionals, dealing with parents, and so on.

2. When you have a problem or question, do you generally expect to get help by going to the research literature? (a) If you do consult the research literature, how do you find out about it? For example, do you read research-oriented publications, attend seminars or training workshops, take graduate courses? (b) Do you have difficulty reading, understanding, and using research information? Describe any specific problems you have.

3. If you have gone to the reading research literature in search of a solution to a problem or question, have you been able to apply the knowledge you gained in the classroom?

4. From your past experiences, do you expect that you will consult the research literature in the future?

5. What problems or questions in reading instruction do you find the least help with in the publications that you typically read or review? What publications do you regularly read?

These rather lengthy interviews yielded 75 questions in 10 categories of reading. We separated questions into categories that seemed to encompass the sense and intent of the questions. The chart below summarizes the frequency of the questions asked in each category.

Category	Number of Related Questions Asked in the 14 Interviews
Reading Readiness	6
Early Stages of Reading	9
Word Recognition	11
Language Development	9
Subskills of Reading	5
Comprehension	17
Curriculum Selection	4
Classroom Organization and Management	5
Motivation for Reading	4
Reading Disabilities/Learning Disabilities	5
TOTAL	75

The questions that are addressed in this document reflect a synthesis of many of the 75 questions raised during the interviews. Some categories and questions are not discussed here; this does not mean that they are not important. The 24 questions we selected for this first report on reading were among those most frequently asked and most amenable to research-guided responses; others will be addressed in future reports.

The next step in our approach to increasing the communication between researchers and practitioners was the selection of an advisory consultant panel of nationally prominent researchers. We asked representatives of the reading research community—individuals and directors of professional organizations—to nominate ten reading researchers whom they would recommend to assist us in the task of providing research-guided answers to practitioners' questions. The individuals named most often were asked to serve on our reading consultant panel. We also invited a reading specialist who had conducted reading research to serve as the practitioner on the panel.

The members of the panel are John Guthrie, Director of Research for the International Reading Association; S. Jay Samuels, Center for Research in Human Learning, University of Minnesota; Cleona Shortridge, Reading Specialist, St. Louis Public Schools; Harry Singer, School of Education, University of California, Riverside; and Phyllis Weaver, Graduate School of Education, Harvard University.

The consultant panel met initially with RDIS project staff to discuss the practitioner questions and decide which questions were most amenable to research-guided responses. The draft of the manuscript that resulted from these early discussions went through an extensive review process. Each of the five sections was sent to the consultant panel and to three to five additional well-known reading educators—both researchers and practitioners—for their criticisms and suggestions. The reviewers included Marilyn Adams, Bolt, Beranek, & Newman, Cambridge, Massachusetts; Rebecca Barr, University of Chicago; Barbara Bateman, University of Oregon, Eugene; Isabel Beck, University of Pittsburgh and Learning Research and Development Center, Pittsburgh, Pennsylvania; Robert Calfee, Stanford University; Courtney Cazden, Harvard University; Jeanne Chall, Harvard University; Larry Frase, Bell Labs, Piscataway, New Jersey; John Fredericksen, Bolt, Beranek, & Newman; Ed Glaser, Human Interaction Research Institute, Los Angeles, California; Kenneth Goodman, University of Arizona, Tucson; J. R. Jenkins, University of Washington, Seattle; Shirley Lewis, Stanford, California; Isabelle Liberman, University of Connecticut, Storrs; Walter MacGinitie, Teachers College, Columbia University, New York; Charles Perfetti, Learning Research and Development Center, Pittsburgh, Pennsylvania; Helen Popp, Harvard University; Roger Shuy, Center for Applied Linguistics, Arlington, Virginia; Nancy Stein, University of Illinois, Urbana; Richard Venezky, University of Delaware, Newark; and Joanna Williams, Teachers College, Columbia University, New York.

It is easy to imagine the diversity of responses that came from these reviewers. Some felt that it was a strong document, some offered suggestions for additions, clarifications, and, in some instances, deletions. Three scenarios aroused a great deal of controversy and had to be rewritten—these were "Skills that Enhance Reading Acquisition," "Reading Readiness Tests," and "Language Experience as an Approach to Beginning Reading."

After all of the reviewers' comments were in, the consultant panel met again for two days to make suggestions for revision, taking all of the comments into account. Later the revised manuscript was sent to the consultant panel for one more round of review.

As you can see, the review process was complicated and time-consuming, but it was also extremely rewarding. Researchers are not able to reach consensus on many of the questions—consensus may never be reached—but the authors feel comfortable that the answers given here are the best answers that the research and educational practice can currently give.

The Document Itself

Research Within Reach: A Research-Guided Response to Concerns of Reading Educators contains 24 questions posed in the form of actual classroom situations. The intent of each of these "scenarios" is to tell enough about the context in which the problem has arisen to help clarify the question. Each scenario is followed by a discussion section, a summary of the discussion, and references that are recommended for additional reading on the topic. The scenarios are divided into five categories of issues on reading: The Nature of Reading and Its Instruction; Reading Readiness; Developing Reading Skill; Reading Comprehension; and Difficulties in Developing Reading Skill.

The authors want to emphasize the importance of the suggested readings at the end of each scenario. The references were selected for their diversity. Some are quite technical, and others are more narrative. Some are literature review papers, some are papers of opinion, and some are reports of research. Some reflect the predominant position of researchers and other professionals in the field (which are presented throughout this report), whereas others represent an opposing point of view.

To further guide the practitioner, the two or three readings in each section that would be especially interesting to and useful for teachers are highlighted. These references are preceded by an asterisk (*). Additional readings can be chosen according to special needs or areas of interest.

A Final Note

Research Within Reach reflects research conclusions, wherever it was possible to draw conclusions. To the extent possible, the authors have based their discussions and recommendations on sound evidence. They have also used their personal opinions, experiences, and common sense. The important point to be made here is that they have tried to make it clear when they have based their discussion on conclusive research evidence and when it has been based on general knowledge. The authors take responsibility for the content. Their purpose has not been to give the final analysis on any of these topics. Research is being conducted now that will require that we take a close look at them again in the near future.

The hope of the authors and of RDIS project staff is that this document will prove useful to practitioners *now.* If you find it thought-provoking or have suggestions concerning the content of the document or the process used, please let us know. We need your input if we are to succeed in our goal of increasing communication between the research and development community and educational practitioners.

The Nature of Reading and Its Instruction

Subskill and Holistic Approaches to Reading Instruction

Question Our school district is conducting a review of the objectives established to guide reading instruction in the elementary grades (one through six). The language arts curriculum committee has identified a large number of separate subskills that they claim should be taught in the six grades. I am a new teacher, and I don't want to make waves, but I can't imagine that anyone, let alone a child, could do so many different things during something that takes place as fast as reading. Is reading really just a lot of separate skills that are performed rapidly, or is it more like a single process that cannot be separated into component skills?

Discussion Some researchers believe that reading is a single process, that it is *holistic* in nature. This term implies that reading is much more than decoding plus comprehension and that it should not be subdivided, even for teaching purposes. Other researchers believe that reading is comprised of different components, or *subskills*. Reading, and understanding what is read, are seen as the integration of a number of separate skills that are interrelated.

In this debate among theorists and researchers, we can identify three major positions: all reading (beginning or skilled) is holistic in nature; all reading consists of separate but integrated subskills; and skilled reading is holistic, but early reading consists of subskills. Some discussion of these positions should provide a framework for answering this teacher's question.

All reading is holistic. Those who contend that reading is holistic in nature view skilled reading as a high speed process wherein the reader does not have to recognize every letter or word but can construct the meaning of the text by making predictions regarding the message and then sampling only as much of the printed material as is necessary to confirm or reject those predictions and make new ones. This ability to derive meaning from minimal textual cues theoretically comes from a well-developed awareness of the spelling patterns and syntactic rules of our language. (For further discussion of linguistic awareness see *Reading Readiness: Skills that Enhance Reading Acquisition.)*

Beginning readers have only begun to develop this awareness of oral and written language patterns. Therefore, they are less efficient than skilled readers at deriving meaning from sampling the text and need to be exposed, even immersed, in an environment that is rich in language. What ought to be remembered about the holistic view of reading is the notion that reading at any level is not conceived as a combination of separable subskills but is instead viewed as a process whose focus is the communication of meaning.

All reading consists of subskills. Individuals who hold this position argue that although skilled reading may appear to be a single process, it is not. In skilled reading, the separate subskills have become so well integrated that readers don't have to pay any attention to them—they all seem to operate automatically. For example, although the process of walking can be divided into a number of specific acts, once we have learned to walk the individual acts are performed so smoothly that they do not seem separable. Similarly, everything happens so fast and smoothly in reading that skilled readers probably couldn't be aware of the various subskills they are using without interrupting the reading process. Despite this, supporters of the subskill position contend that the many subprocesses are all in operation even if they are not apparent.

Unlike skilled readers, beginning readers haven't learned all the subskills, and the ones they know aren't used together very smoothly. For example, they often concentrate on pronouncing individual words (even parts of words), and they can only recognize a limited number of them. Beginners often read in a slow, choppy manner; sometimes it sounds as if they are reading a list. It is common for beginners to come to the end of a sentence or passage and seem not to understand or remember what they just finished reading. This is because they have to pay attention to the separate parts of reading—word recognition takes so much attention that comprehension suffers. (For a more detailed discussion of this topic see *The Nature of Reading and Its Instruction: The Role of Word Recognition in Reading* and *Developing Reading Skill: The Relationship between Decoding and Comprehension.*)

The subskills position on teaching reading is obvious: reading can be analyzed into a number of separate skills that can be taught and integrated, with the result being reading. Most individuals who support this view believe that teaching the subskills is not enough; you must provide plenty of practice using easy materials so that the subskills will not need conscious attention and will become integrated into what looks more and more like skilled reading.

Reading is a combination of the holistic and subskills positions. A third view on the nature of reading combines the other two. Supporters of this position make a distinction between beginning readers and skilled readers, that is, they think that the nature of the reading process actually changes as skill develops. In the early stages reading is accomplished by attending to identifiable component skills or parts; by the time the skilled level is reached, reading has become a meaning-oriented process and is no longer divisible into subskills. The component parts are no longer relevant or existent when analyzing the nature of fluent reading.

What actually is the nature of reading? Which of the above descriptions is accurate? The research findings currently available do not provide conclusive information, and it may take a long time for these issues to be resolved and supported by the results of research. Reading educators do not have time to wait. Whatever view of reading is accurate, an equally pertinent question for educators as we see it is, How should reading be viewed so that its acquisition and development are facilitated? We think it is helpful to make the distinction between the reading process and effective teaching of reading. An example from teaching sports might help make this point.

In learning to play tennis, a very complex activity, students are taught components of the skill. They learn footwork, how to grip the racket, how to hit backhand and forehand shots, how to serve, and so on. And most of these components are broken down further into even smaller steps for teaching purposes. Although the instructor may often demonstrate the whole skill, mere demonstration is never the only means of teaching. The students practice the components and play the game at all stages. This kind of tennis instruction is similar to the sort of reading instruction that we are proposing.

Although some research suggests that *skilled* reading is a single, holistic process, there is no research to suggest that children can learn to read and develop reading skill if they are taught using a method that treats reading as if it were a single process. Therefore, for instructional purposes, it is probably best to think of reading as a set of interrelated subskills. The separate skills should be taught, practiced, and integrated with other skills being taught and with those that have already been learned. The important thing to remember is that although reading may be taught subskill by subskill, students should always have ample opportunity to practice the whole activity. (For related discussion see *The Nature of Reading and Its Instruction: Integration and Sequence of Subskills in Reading.*)

Summary

We do not know whether skilled reading is a holistic process or a set of interrelated subprocesses; researchers have not yet resolved this problem. In this case, we do not think reading educators can wait for resolution. Based on our analysis of reading theory and reading research, we recommend for teaching purposes that reading be viewed as a set of subskills that can be taught and integrated. We feel that development of subskills is important for learning to read and will prove useful to skilled readers when they encounter difficulty in a text.

Suggested Reading

Athey, I. *Essential skills and skill hierarchies in reading*. Washington, DC: National Institute of Education, 1975.

Calfee, R.C., & Drum, P.A. How the researcher can help the reading teacher with classroom assessment. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading.* Hillsdale, NJ: Erlbaum, in press.

Goodman, K. Reading: A psycholinguistic guessing game. In H. Singer & R. Ruddell (Eds.), *Theoretical models and processes of reading.* Newark, DE: International Reading Association, 1976.

*Guthrie, J. Models of reading and reading disability. *Journal of Educational Psychology,* 1973, *65*(1),9–18.

Perfetti, C., & Lesgold, A. Coding and comprehension in skilled reading and implications for reading instruction. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading.* Hillsdale, NJ: Erlbaum, in press.

*Samuels, S.J. Hierarchical subskills in the reading acquisition process. In J. Guthrie (Ed.), *Aspects of reading acquisition.* Baltimore, MD: Johns Hopkins University Press, 1976.

Smith, F. *Understanding reading.* New York: Holt, Rinehart & Winston, 1971.

Williams, J. Learning to read: A review of theories and models. *Reading Research Quarterly,* 1972–73, *8*(2), 121–146.

Integration and Sequence of Subskills in Reading

Question I am a fourth-grade classroom teacher. Our district has adopted a skills-oriented reading program to assist us with instruction and evaluation in reading. Although our students appear to master many of the subskills of reading, they do not seem to integrate these skills enough to become fluent readers. A number of teachers that I have talked with share this concern and worry about the emphasis that has been placed on the objectives or skills approach to reading instruction. Is there guidance for how to integrate subskills so that our students become fluent readers?

I have another, related problem. Our program specifies the order in which we are to teach the reading subskills. The teacher's manual says that the subskills we teach earlier are prerequisites for the ones we teach later. This hasn't always worked. There are some students who seem to know all the prerequisite skills listed and still are not able to learn those next on the list. Sometimes the opposite is the case—some students show mastery of skills that are supposed to be harder than others that they are unable to learn. Are there any suggestions for the proper sequencing of the subskills in reading?

Discussion It is important in discussing the first question to distinguish between the *intended* use of skills-oriented materials and the *actual* use of the materials for reading instruction. The developers and advocates of skills-oriented reading approaches generally view reading as a set of skills that can be identified for testing, sequencing, and training. They suggest that fluent reading is characterized by the automatic integration of the reading subskills. Based on this theoretical view of reading, subskills-oriented reading materials begin by teaching subskills and sets of subskills to the point where they can be performed accurately, rapidly, and with minimal attention. These subskills are then combined or integrated with other skills that have already been acquired. This integrated process continues until the separate skills are performed in a smooth, integrated fashion that more and more resembles fluent reading. Unfortunately, researchers, program developers, and teachers know more about the separate skills and how to teach them than about the process of integrating skills and how to teach students to do so. Therefore, although curriculum guides may discuss the importance of integrating the skills, there is no answer yet on just how this ought to be done. We have some hunches, however, and we discuss them later.

How does the theory or the intended use compare to the practice or actual use of skills-oriented reading materials? Too often the subskills are taught and practiced in isolation, without enough opportunity to use them in actual reading. This is a little like learning to swim on dry land. You can learn all the strokes, but you are not swimming until you can perform the strokes in the water. Being able to perform all of the subskills isn't the real test of being able to read—only actually reading is! The important thing to remember, if you are using a skills approach, is that being good at the separate subskills is not the goal of reading instruction—it is only a means, not an end in itself. A danger in stressing the skills in isolation for too long is that students may come to mistake this for reading and become less and less interested in reading.

Students should be given ample opportunity to practice the skills they are learning by using them to read various kinds of meaningful materials. The materials should be easy to read and very interesting. Students should have plenty of practice so they become "comfortable" with all of their newly learned skills. (Although these recommendations are not well documented by research, many researchers share our opinions and offer similar suggestions for integrating the subskills of reading.)

Sequencing subskills. As little research as there is to answer this teacher's first question, there may be even less on which to base our response to the second question. But, because the issue of sequencing subskills is so important and a matter of concern for so many, we want to discuss it and make recommendations based on our common sense and that of others.

When researchers and reading program developers sequence the subskills that are involved in reading, they do so on the basis of several assumptions. Some discussion of these assumptions may be helpful in explaining why this teacher, and probably many others, has students who don't learn reading subskills in the order prescribed by the curriculum guide.

Subskills and their orderings are often arrived at through a procedure known as *task analysis.* This is a logical (not experimental) procedure that begins with an end point, for example, being able to recognize single syllable words that conform to a regular spelling-to-sound pattern. A question is then asked: What does a person need to know or be able to do in order to perform this skill? If three subskills are needed for this word recognition task, the next step is to ask the same question about each of the three subskills. Continuing this procedure, you will eventually identity all of the prerequisites for a given skill. An assumption commonly made in doing task analysis is that the order in which the skills are identified corresponds to the order of difficulty and acquisition of the subskills. That is, the last skill identified is the easiest and the first to be acquired; the first skill identified results from learning all the others and is the last to be learned.

This graded series of skills is referred to as a *skills hierarchy*. After a hierarchy has been developed by logical task analysis, it should be tested to determine its validity or accuracy. One of the several ways in which this can be done is to test it on students. For example, test items are developed to measure the various subskills of the hierarchy. The highest subskills a student or group of students can perform is identified. If the order of the skills in the hierarchy is accurate, then the student(s) should be able to perform all the skills below that skill. If not, then the ordering of skills, or even their inclusion in the hierarchy, may be incorrect and needs to be adjusted.

There are some problems with this procedure. First, in reading, very few portions of the process have been analyzed or even can be analyzed in this way. Of those that have, few have been subjected to tests to determine if they are valid, and, if so, for what sorts of students, under what conditions, and so on.

Second, hierarchies are usually developed by analyzing skilled performances of the tasks. It is assumed that the way to teach new learners corresponds to the logical relations between skills as they are used by skilled performers. This may not be the case. It could be that the skills should be taught in a sequence that differs a great deal from the way the skills are performed once they have been learned. In other words, skills hierarchies may be very different from teaching hierarchies.

Third, individuals differ. The sequencing of skills that works for one student may not work for all students. Therefore, these orderings shouldn't be considered fixed and unyielding—they represent a general description of some hypothetical average student and should only be used as a guide for sequencing instruction. They are not meant to represent the way all students learn.

What should teachers do when students do not learn to read by acquiring subskills in an order prescribed in the teacher's manuals of reading programs? Common sense can go a long way in teaching reading using a subskills-oriented approach. For example, if a student has trouble learning a particular skill, don't dwell on it for long. Try the next set of skills and come back to the troublesome one at a later time. It could be that this skill has been misplaced in the sequence or that it is in the wrong order at least for this individual. In addition, don't worry if the student hasn't mastered some of the lower level skills, so long as the higher level skills are being acquired easily. If there are special reasons for knowing certain lower level skills, then try alternate teaching strategies. The most important thing to remember is that an ordering of skills is meant as a guide, and it should not be adhered to rigidly if students are having trouble learning when that sequence is used.

Summary

Our recommendations may seem fairly simple given the complex nature of the questions. They are simple and general by necessity, because there is not enough research in this area to permit us to be more detailed. Instead of being guided by research, they are guided in large part by common sense and experience—our own and that of others whose work we respect.

If students seem to have mastered the subskills of reading and have not become fluent readers, it could be that they have not had enough opportunity to practice newly acquired skills in the context of actual reading. Thus, we recommend that as soon as skills are performed accurately, they should be practiced until they can be performed rapidly and with minimal attention. This should be done using interesting and meaningful materials whenever possible.

If students are not learning reading subskills in the order suggested by program developers, the order could be wrong in general, or it could be wrong for that particular group of students. If the order appears to be incorrect, use the prescribed order as a guide and modify it, using observations and common sense.

Finally, and perhaps most important, remember that being able to perform subskills of reading is not all there is to reading; it is a means for developing reading proficiency and is not reading itself. Thus, we recommend that subskills teaching and practice be balanced with a lot of reading. Use books, magazines, newspapers—anything so long as the students are actually reading meaningful text.

Suggested Reading

Case, R. Gearing the demands of instruction to the developmental capacities of the learner. *Review of Educational Research*, 1975, *45*(1), 59–87.

Gagné, R.M. *The conditions of learning* (2nd ed.). New York: Holt, Rinehart & Winston, 1970.

Gibson, E., & Levin, H. *The psychology of reading*. Cambridge: MIT Press, 1975. (See especially Chapter 9.)

*Guthrie, J. Models of reading and reading disability. *Journal of Educational Psychology*, 1973, *65*(1), 9–18.

Perfetti, C., & Lesgold, A. Coding and comprehension in skilled reading and implications for reading instruction. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

*Samuels, S.J. Hierarchical subskills in the reading acquisition process. In J. Guthrie (Ed.), *Aspects of reading acquisition*. Baltimore, MD: Johns Hopkins University Press, 1976.

Singer, H. Resolving curricular conflicts in the 1970's: Modifying the hypothesis, it's the teacher who makes the difference in reading achievement. *Language Arts*, 1977, *54*(2), 158–163.

Smith, F., & Goodman, K. On the psycholinguistic method of teaching reading. *The Elementary School Journal*, 1971, *71*(4), 177–181.

White, R. Research into learning hierarchies. *Review of Educational Research*, 1973, *43*(3), 361–375.

The Role of Word Recognition in Reading

Question I have spent a great deal of time teaching reading comprehension this year, presenting story summaries and questions to direct my fourth-grade students' reading and conducting discussions of the stories they have been assigned. Despite all my efforts, my students have shown little improvement on the comprehension section of the reading achievement tests. Although at this level I am expected to concentrate more on comprehension, I find that my students are having so much difficulty with word recognition that it interferes with their comprehension. They do not read fluently when I have them read aloud; they stumble over words, and they have difficulty even trying to pronounce some words. Is it advisable to go back and attempt to improve their word recognition skills before continuing to work on comprehension?

Discussion This teacher is raising a question that many educational researchers and experimental psychologists have been trying to answer: What is the role of word recognition in reading, or, more narrowly, in reading comprehension? Other facets of this question which reflect educational concerns are, How important are word recognition skills to overall reading performance? and, How well developed must they be in order not to interfere with reading comprehension?

In learning to read, most of the reader's attention is devoted to recognizing words; there is little attention left to devote to comprehending the text. In the early grades materials are written with this in mind—the emphasis in most beginning reading materials is on learning the mechanics, learning to recognize words. The materials are very easy to understand, with simple vocabularly, short sentences, and "story lines" that are easy to follow. This allows the reader to devote most of his or her attention to word recognition and still understand the text.

By about the fourth grade, students are expected to have mastered the decoding or mechanical aspects of reading. Presumably, they no longer have to devote much of their attention to recognizing words and therefore can devote more attention to understanding and thinking about the text. At this grade level, the materials become more difficult: vocabulary is at a more abstract level, sentences are longer and more complicated, and the information requires more thought. In addition, the purpose of reading starts to change at this level. Students are expected to learn new information through reading, rather than through oral instruction from the teacher. All these factors taken together make word recognition proficiency very important.

Research has shown that words must be recognized both accurately and very rapidly to permit time (or "free up" attention) for comprehension. Conversely, comprehension suffers in relation to the degree of word recognition difficulty; the lower the level of word recognition skill, the greater the interference with comprehension. (For a detailed discussion of this relationship, see *Early Stages of Reading: The Relationship between Decoding and Comprehension.*)

Students who have not mastered the word recognition aspects of reading by the time they are in the fourth grade are likely to begin having problems that get worse each year. The situation is circular. Students are expected to learn information from reading, and learning new information is often dependent on having learned previous information. If students can't read well, it becomes harder and harder for them to learn. Meanwhile, although they may be progressing in their reading skills, they probably are not doing so fast enough to catch up on what they have missed and keep up with new information being presented. They get "behinder and behinder"!

Is it advisable in such situations to go back and try to improve word recognition skills before continuing to work on comprehension? We have several recommendations.

First, we strongly recommend continuing efforts to improve word recognition skills. Although being able to recognize words does not guarantee that written text will be comprehended, if students can't recognize the words, they don't even have a chance to understand them.

Second, we do not recommend teaching word recognition skills *instead* of comprehension skills, as the teacher's question implies. As texts get more difficult, comprehension skills become more important. Initially more emphasis should be placed on word recognition, but it would be a serious mistake to eliminate instruction in comprehension from any level of a reading program.

Third, we recommend that content area information (e.g., social studies, science, and mathematics) be provided for poor readers who may not be able to acquire it themselves from grade-level texts. Teachers may do so by using materials that are written at a lower grade level or by providing instruction orally, by audio cassette, and so on.

Summary

Research has demonstrated the importance of word recognition skill for overall reading performance. Observations indicate that at about the fourth-grade level, reading materials begin to get much more difficult, and students are expected to acquire new information by reading. The need for accurate and rapid word recognition becomes greater under these circumstances. For these reasons, we recommend an emphasis on word recognition skills for students who are having difficulty. In addition, we recommend continued instruction in comprehension in all content areas. Students should be instructed in all subjects while working at improving word recognition skills.

Suggested Reading

*Dahl, P., & Samuels, S.J. Teaching children to read using hypothesis/test strategies. *The Reading Teacher*, 1977, *30*(6), 603–606.

LaBerge, D., & Samuels, S.J. Toward a theory of automatic information processing in reading. *Cognitive Psychology*, 1974, *6*(2), 293–323.

Perfetti, C., & Hogaboam, T. Relationship between single word decoding and reading comprehension skill. *Journal of Educational Psychology*, 1975, *67*(4), 461–469.

Perfetti, C., & Lesgold, A. Coding and comprehension in skilled reading and implications for reading instruction. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

*Seifert, M. Research views: Reading comprehension and speed of decoding. *The Reading Teacher*, 1976, *30*(3), 314–315.

Shankweiler, D., & Liberman, I. Misreading: A search for causes. In J. Kavanagh & I. Mattingly (Eds.), *Language by ear and by eye: The relationships between speech and reading*. Cambridge: MIT Press, 1972.

White, R., & Gagné, R. Past and future research on learning hierarchies. *Educational Psychologist*, 1974, *11*(1), 19–28.

Rules of Syllabication and Reading Skill

Question My fourth-grade students have not acquired accurate and rapid word recognition skills. Would it help to teach them the basic syllabication rules (like VC/CV) and then give them a lot of practice using the rules in such materials as worksheets or activity cards? Will learning syllabication rules improve their reading?

Discussion For some time, many authorities on reading instruction recommended teaching rules of syllabication as a means of improving recognition of multisyllabic words. They reasoned that if students knew rules of syllabication, they could apply the rules to help them pronounce unknown words. Exercises were used to teach and provide practice in using the rules. These exercises often took the following form: A rule was stated, followed by a set of real words or pseudowords. Students were instructed to put slashes between the letters that marked the end of one syllable and the beginning of another.

Opinions are changing. Fewer authorities are recommending this type of instruction, and a growing number are speaking out strongly against teaching syllabication rules. There appear to be several reasons for this change of opinion. First, a number of surveys have been conducted to see how often rules of syllabication are useful. That is, what percentage of the time does a given rule hold for a list of words that conforms to a given spelling pattern? Lists and figures vary, but in general, the rules hold for as few as 44 percent of the words and for no more than 80 percent of the words. Thus, in some instances there are more words that are exceptions to the rules than there are words that conform to them. Consequently, use of syllabication rules could create confusion in recognizing words rather than reducing it.

Second, written syllables generally conform to those in speech, but not always. If division of written words into syllables is not the same as division of spoken words, then syllabication of the written form may not result in correct pronunciation. Again, something designed to reduce confusion may actually cause it.

A third reason for the shift away from the teaching of syllabication rules has to do with the relationship between syllabication rules and word recognition. Recent studies indicate that rule-oriented syllabication instruction does not improve word recognition skills or reading comprehension.

Despite these strong reasons for instructional change, many teachers still believe that word recognition or comprehension will improve by teaching syllabication rules. Hence, such teaching continues to be a common practice. If you still think that syllabication rules should be a part of reading instruction, perhaps we can sway you with one or two examples.

Rule: If the first vowel in a word is followed by two consonants, the first syllable usually ends with the first of the two consonants.

Examples: butter differ

Exceptions: abroad respond

The rule holds more or less for the words *butter* and *differ*. But, a child could easily be confused since *butter* is pronounced more like /bud•r/, with no consonant sound at the beginning of the second syllable, and certainly not with a /t/ sound. The same is true for the word *differ*. The rule doesn't hold at all for the words *abroad* and *respond*. Applying this rule would result in pronouncing the first word /ab•rōd/ and the second word /rĕs•pond/. This would surely confuse a student who is familiar with these words in their spoken form.

Rule: If the first vowel is followed by a single consonant, that consonant usually begins the second syllable.

Examples: student tomato

Exceptions: primitive general

Try pronouncing the exceptions for yourself, and you will see our point.

Although we do not advocate teaching syllabication rules as a technique for recognizing multisyllabic words, we want to stress the importance of developing strategies that enable students to develop this skill. There is growing research evidence that as reading skill develops, students read in larger sized units, progressing from single letters to letter clusters and then on to words and phrases. The demands of reading are so great that if readers do not progress to perceiving in larger units, it is unlikely that they will be able to understand or remember what they have read.

The research literature abounds with studies that have attempted to identify what units are "real" or actually used by skilled and nonskilled readers. Although a review of this research is beyond the scope of our discussion, we can offer an example that appears to have promise for instruction.

One example consists of letter clusters, or spelling patterns, that are always pronounced in the same way, such as *ight*, *ant*, and *ish*. Research results indicate that good readers recognize these patterns as single units and use them in word recognition. These patterns could form a part of word recognition instruction for children who tend to decode words letter by letter and who cannot manage to identify even short two syllable words. They could be given instruction and practice in recognizing a variety of these types of patterns. Once these patterns have been established as units that are recognized automatically (accurately, rapidly, and without conscious attention) in single syllable words, they could next be identified in two and three syllable words. Some research indicates that this technique is successful in improving word recognition.

Summary

Research indicates that teaching rules of syllabication is not a useful technique for improving word recognition. There are so many exceptions to the rules that such instruction may actually cause confusion rather than reduce it.

Reading with good comprehension requires development of strategies for recognizing multisyllabic words. Teaching certain spelling patterns and providing practice in identifying them until they are recognized automatically is one technique for improving word recognition. Although research on this technique is continuing, we think that it is a promising technique and certainly worthy of application in teaching word recognition.

Suggested Reading

Canney, G., & Schreiner, R. A study of the effectiveness of selected syllabication rules and phonogram patterns for word attack. *Reading Research Quarterly*, 1976–1977, *12*(2), 102–124.

Gibson, E., Oser, H., & Pick, A. A study of the development of grapheme-phoneme correspondences. *Journal of Verbal Learning and Verbal Behavior*, 1963, *2*, 142–146.

*Glass, G. *A support of the Glass-analysis approach to teaching the decoding aspect of reading.* Garden City, NY: Adelphi University, Reading and Study Center, 1970.

Gleitman, L., & Rozin, P. Teaching reading by use of syllabary. *Reading Research Quarterly*, 1972–73, *8*(4), 447–483.

LaBerge, D. The perception of units in beginning reading. In L.B. Resnick & P. A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

Marzano, R., Case, N., Debooy, A., & Prochoruk, K. Are syllabication and reading ability related? *Journal of Reading*, 1976, *19*(7), 545–547.

Savin, H.B., & Bever, T.G. The nonperceptual reality of the phoneme. *Journal of Verbal Learning and Verbal Behavior*, 1970, *9*(3), 295–302.

Spoehr, K.T., & Smith, E.E. The role of syllables in perceptual processing. *Cognitive Psychology*, 1973, *5*(1), 71–89.

Venezky, R., & Massaro, D. The role of orthographic regularity in word recognition. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

*Wardhaugh, R. Syl-lab-i-ca-tion. *Elementary English*, 1966, *43*(7), 785–788.

*Waugh, R.P., & Howell, K.W. Teaching modern syllabication. *The Reading Teacher*, 1975, *29*(1), 20–25.

*Zuck, L. Some questions about the teaching of syllabication rules. *The Reading Teacher*, 1974, *27*(6), 583–588.

Reading Readiness

Skills that Enhance Reading Acquisition

Question I supervise primary grade and kindergarten teachers in a school district serving a low income neighborhood. This spring and summer we are going to revise the kindergarten program. Our primary goal is to do the best possible job of preparing the students for reading. We now have a kindergarten curriculum that we think is quite rich in language activities. Are there specific language skills that we ought to emphasize—skills that are so critical that children would have great difficulty learning to read without them? If so, what activities foster the development of these skills?

Discussion It wasn't long ago that the major function of kindergarten was to teach children social skills, such as turn-taking and sharing. This half-day experience served also as a transition between the familiarity and warmth of days at home and the formality of first grade.

Cognitive skills were also developed. Children learned colors, shapes, numerals, and sometimes the alphabet; they learned about time, weather, and holidays; they learned new verbal skills through activities like "show-and-tell"; and they learned important concepts like relative dimensions of size, spatial orientation, and directionality. Thus, although some of the groundwork for reading was laid, the important purpose of kindergarten remained socialization.

Things have certainly changed! Kindergartens now are places of more formal and systematic prereading instruction.[1] The launching of Sputnik in 1957 seems to have been the impetus for many changes in education in the United States, among them an "earlier-is-better" philosophy that became and remains popular. Furthermore, many mothers work, there are more single parent homes, and most youngsters are exposed early to other children and adults. Nursery school, Headstart programs, and day care centers are now the environment in which many children develop and are taught the skills that had been emphasized in kindergarten. What kind of prereading instruction is now being offered in kindergarten?

Most programs of instruction are similar to the one described in the district supervisor's question—"quite rich in language activities." Kindergarten children tell and are told stories, letters and letter names become familiar (see *Reading Readiness: Teaching Letter Names*), written words are used to label common objects in the classroom, and writing is often encouraged. It is through this repeated exposure to a variety of oral and written language activities that children are likely to develop what is sometimes referred to as "linguistic awareness"—awareness of the nature of one's own language. This includes knowing what reading is; knowing conventions of print such as reading from left to right, top to bottom, one line at a time; and knowing the concepts of a letter, word, sentence, or story. Development of this linguistic awareness is an important component of any prereading program.

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[1] Preparation of formal mathematics and other kinds of instruction also takes place in kindergarten, but these curricular areas are beyond the scope of this discussion.

There is another set of linguistic awareness skills that are thought by many to be central to reading acquisition and development. These skills, sometimes referred to as "auditory perceptual skills" or "phoneme segmentation skills," deal with language at the level of letters and corresponding sounds. Research has shown these skills to be related to success in learning to read. What are these skills and why are they so important?

Many educators and researchers view reading in relation to speech and language. They suggest that children must learn to associate spoken words with their corresponding written forms in order to learn to read. Some go a step further and note that spoken words are actually made of individual sounds (phonemes), which correspond to letters (graphemes) in words. Those who analyze reading into letter-sound or grapheme-phoneme correspondences usually advocate that children become sensitive to these features of spoken and written language prior to or very early in learning to read. How can children be taught this very abstract concept when they are so young?

Research indicates that young children can be made more aware of the parts of spoken words through exposure to various kinds of language activities. One common example is rhyme. Rhyming one-syllable words involves mentally separating the initial phoneme from the word, leaving the remainder of the word intact, and replacing it with a different initial phoneme. Thus, when you ask children to tell what rhymes with *dog* and they respond with *bog*, *hog*, or *log*, they are indicating an awareness of the phonemic structure of our language.

It should be noted that most children probably learn to rhyme without being able to articulate what they have done with the words and some without even knowing the name of the activity. Nevertheless, experience with this kind of language game seems to foster an awareness that we think is important for learning to read.

Another activity in the same category as rhyming is sorting by initial (or final) sound using objects, pictures of objects, and spoken words. A more difficult activity involves the deletion of a sound anywhere in a word, such as *meat* without the /m/ sound, *beef* without the /f/ sound, or *camp* without the /m/ sound. There is research suggesting that children who are poor readers often cannot perform these phoneme-level skills. We think that teaching young children these skills is likely to improve early-grades reading achievement.

Summary

There are some skills that seem to be very important for learning to read. These are often referred to as linguistic awareness skills and include sensitivity to relations between speech, language, and reading; knowing what words and sentences are; being able to manipulate phonemes in words; and understanding the conventions of printed language. A curriculum rich in language activities seems to foster development of these linguistic awareness skills. Reading to children, allowing opportunities for writing, and playing word games, letter games, and so on, are all important in a prereading program.

We highlighted certain auditory or phoneme-level skills that are considered by many to be prerequisite to reading. While mastery of these skills is attained by some children through exposure to more general language activities, research results indicate that specific instruction is often helpful. In general, it appears that good readers are good at auditory perceptual activities, poor readers are not, and reading achievement in the primary grades can be improved by teaching these skills. We recommend that most children be taught sound matching, phoneme segmentation, and other auditory perceptual skills as a part of their early school experience.

Suggested Reading

*Cazden, C. Play with language and metalinguistic awareness. In J. Bruner, A. Jolly, & K. Sylva (Eds.), *Play--Its role in development and evolution*. New York: Basic Books, 1976.

Downing, J., & Oliver, P. The child's conception of a word. *Reading Research Quarterly*, 1973–74, *9*(4), 568–582.

Hollingsworth, P. Interrelating listening and reading. In J. Figurel (Ed.), *Reading and realism*. Newark, DE: International Reading Association, 1969.

Liberman, I., & Shankweiler, D. Speech, the alphabet, and teaching to read. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

*Rosner, J. Auditory analysis training with prereaders. *The Reading Teacher*, 1974, *27*(4), 378–384.

Wallach, M., & Wallach, L. *Teaching all children to read*. Chicago: University of Chicago Press, 1976.

*Venezky, R. Prerequisites for learning to read. In J.R. Levin & V.L. Allen (Eds.), *Cognitive learning in children: Theories and strategies*. New York: Academic Press, 1976.

Teaching Letter Names

Question

I have been a teacher in the same district for eight years. Over the years I have taught first, second, and fourth grades; now I teach kindergarten. The kindergarten curriculum lists a number of skills that children should be taught to prepare them for formal reading instruction in the first grade. Knowledge of the letter names is one of the skills listed. How important is it for kindergarteners to learn the letter names? Will it make learning to read easier? Will they become better readers? I had poor readers in the other grades I've taught, and I know that most of them knew the letters of the alphabet. I have so much to teach in one year—if this skill doesn't help with reading, then I'll just skip it. What should I do?

Discussion

As with so many issues in reading instruction, there are two sides to the controversy over teaching letter names. Some individuals believe that the reading process never involves *naming* letters; instead it involves using the sounds that are represented by letters. They would argue that because learning to read is so complicated, adding an extra activity would only lead to confusion. Individuals who hold this point of view recommend teaching children to refer to the letters by their corresponding sounds rather than by their names.

Others recommend teaching the letter names as a part of prereading or early reading instruction. These individuals cite studies that have shown that many children who obtain high scores on a reading achievement test given at the end of first and second grades also knew the letter names when they began reading instruction. In other words, this research indicates a moderate to high correlation between alphabet knowledge and reading achievement. The important question here is, did learning the letter names *cause* these students to become good readers? Some readers may want to read the following explanation of correlation coefficients.

> A correlation coefficient is a statistic that reflects the magnitude of the interrelatedness or mutual relation of two or more attributes. For example, let's say that we are interested in finding out what the relationship is between shoe size and length of hair. Do people with big shoes (and therefore big feet) have long hair? Conversely, do people with small feet have short hair? For the sake of discussion, let's suppose that the result of calculating a correlation coefficient reveals that many people sampled have big feet and long hair and, conversely, many people sampled have short feet and short hair. Based on this, would you recommend to parents that if they want their children to have small feet they should keep their hair cut short? Of course not. Correlations only indicate the strength with which variables are interrelated—they never reveal whether one causes the other.

From the correlational studies that have been done, two relationships are plausible: (1) learning letter names results in children becoming better readers and (2) learning the letter names and being a good reader are both the result of other factors.

As with most research in education, we cannot be completely sure which of these relationships is likely to be the case. But most experts think that the latter is the more likely explanation. That is, letter name knowledge and reading achievement are the result of something else. That "something else," they think, is the combination of cognitive ability and an environment that emphasizes the importance of reading and other language skills and fosters their growth. In such environments, parents read to their children, give them books of their own, take them on frequent trips to the library, play word games with them, keep magnetic alphabet letters on the refrigerator, and so on. It is this early and frequent experience with all sorts of language activities, including learning the names of the letters of the alphabet, that many educators believe makes becoming a good reader more likely.

Should teachers abandon teaching the letter names because they are not likely to "cause" good reading? We don't think so. Letter names are useful labels. They facilitate communication between a teacher and the students during instruction in reading, spelling, writing, and other related language activities. In addition, they are easy to use. Each letter has only one name, whether it is in upper or lower case, in printed or cursive form. This is not so if the sounds of the letters are used as labels. For example, would the letter *a* be pronounced as it is in *apple* or as it is in *ape*?

There are other reasons for teaching the letter names. Learning them provides children still another learning experience that may help them become good readers. Also, parents and grandparents think knowledge of the letter names is an important accomplishment for prereaders. Maybe this attention from adults provides a healthy beginning and lays the groundwork for later success in reading.

Summary

Activities which teach letter names form part of the rich and varied language environment that seems to produce better readers. Young children are proud of their letter name knowledge, and we think that it is a good idea to provide kindergarteners with this sense of accomplishment. Most important, the letter names should be taught during kindergarten because letter name knowledge is necessary for communication between the teacher and the students during reading and language instruction.

Suggested Reading

*Chall, J. *Learning to read: The great debate.* New York: McGraw-Hill, 1967.

Downing, J., & Thackray, D.Z. *Reading readiness.* London: Hodder & Stoughton, 1975.

Durkin, D. *Teaching young children to read.* Boston: Allyn & Bacon, 1976.

Dykstra, R. *Relationship between readiness characteristics and primary grade reading achievement in four types of reading programs.* Paper presented at the conference of the American Educational Research Association, Minneapolis, March, 1970. (ERIC Document Reproduction Service No. ED 039 103)

Jenkins, J.R., Bausell, R.B., & Jenkins, L.M. Comparisons of letter name and letter sound training as transfer variables. *American Educational Research Journal,* 1972,9(1), 75–86.

Johnson, R.J. *The effect of training in letter names on success in beginning reading for children of differing abilities.* Paper presented at the conference of the American Educational Research Association, Minneapolis, March, 1970. (ERIC Document Reproduction Service No. ED 038 263)

*Samuels, S.J. The effect of letter-name knowledge on learning to read. *American Educational Research Journal*, 1972, 9(1), 65–74.

*Venezky, R.L. The curious role of letter names in reading instruction. *Visible Language*, 1975, 9(1), 7–23.

Visual Perceptual Training

Question The kindergarten and first-grade teachers in my school district meet regularly to plan and share ideas. During our last meeting, one teacher raised a question about the benefits of visual perceptual training to beginning reading. We realized that we are confused about this area of instruction, yet most of us have used materials from time to time that purport to improve visual perceptual skills. Are visual perceptual activities likely to be helpful to students in the early stages of learning to read? If so, are some activities more helpful than others?

Discussion Visual perceptual training usually begins by having children discriminate among geometric or abstract shapes. Students might progress from choosing from three or four shapes the one that matches the target shape or indicating whether two shapes are the same or different to learning to name and copy the shapes. Tracing, completing mazes, copying designs using blocks, and stringing beads according to patterns are other activities commonly included in visual perceptual programs. In some programs, children also learn to discriminate, recognize, and produce the letters of the alphabet.

Visual perceptual training programs have been widely used during the past few decades and are still very popular in some school districts. This popularity stems from the fact that, for some time, reading was considered to be primarily a visual process; the relationship between reading and spoken language was not considered to be as important as it is currently. In fact, children who had difficulty learning to read were often taken to eye specialists in pursuit of a solution to their reading problems. Those who believe that reading is primarily a visual process logically assume that training students in visual perceptual skills facilitates reading acquisition. Has research supported these assumptions?

Most research has shown that children who practice discriminating and copying shapes and the other activities mentioned earlier do get better at these activities—for the most part, children will learn what they are taught. But research indicates that learning these skills does not improve reading.[1] Having said that, however, it is important that we qualify the statement.

On the basis of research findings we do not recommend perceptual training using nonalphabetic shapes as a means of facilitating reading acquisition, but we do recommend that children learn to discriminate, recognize, and produce letters of the alphabet. Common sense suggests that these skills are important in learning to read and especially in learning to write. They should be taught before, or as a part of, early reading and writing instruction. But, it is important to remember that learning to read involves much more than recognizing letters and distinguishing among them. In other words, discriminating letters is not a stumbling block for most children who are learning to read. (For discussion of other skills that are important for learning to read, see *Reading Readiness: Skills that Enhance Reading Acquisition.*)

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[1] However, training on some of these activities (e.g., tracing, maze completion) may improve skills other than reading. For example, some of these activities may be important in the development of fine-motor coordination.

Children should also be given practice in discriminating groups of letters that form real words. We recommend this both because it is very important to be able to recognize the difference between words, especially words that are very similar, and because word discrimination is one of many reading-related activities which can give children an advantage in early reading. (For further discussion of this topic, see *Reading Readiness: Teaching Letter Names.*) We must caution, however, that because these visual skills, letter and word discrimination, are often not a source of reading difficulty, they should be a part of the instructional program only for those children who are having problems in this area and only until the children have mastered these skills. This may seem obvious, but some reading curricula include visual perceptual activities when children are well into early reading and long after these activities are beneficial.

Summary

Research does not support the contention that visual perceptual training which uses nonalphabetic shapes facilitates early reading, but, perceptual activities that involve letters and words are related to reading and writing and should be a part of prereading or early reading instruction. Because most students master them early, these visual perceptual skills should not be a major emphasis of the early reading curriculum.

Suggested Reading

*Barrett, T. The relationship between measures of pre-reading visual discrimination and first grade reading achievement: A review of the literature. *Reading Research Quarterly*, 1965, *1*(1), 51–76.

Doehring, D. *Patterns of impairment in specific reading disability.* Bloomington: Indiana University Press, 1968.

*Hammill, D. Training visual perceptual processes. *Journal of Learning Disabilities,* 1972, *5*(9), 552–559.

*Hammill, D., Goodman, L., Wiederholt, J.L. Visual-motor processes: Can we train them? *The Reading Teacher,* 1974, *27*(5), 469–478.

Robinson, H. Perceptual training—Does it result in reading improvement? In R. Aukerman (Ed.), *Some persistent questions on beginning reading.* Newark, DE: International Reading Association, 1972.

Shankweiler, D., & Liberman, I. Misreading: A search for causes. In J. Kavanagh & I. Mattingly (Eds.), *Language by ear and by eye: The relationships between speech and reading.* Cambridge: MIT Press, 1972.

Vernon, M.D. *Backwardness in reading.* Cambridge: Cambridge University Press, 1960.

Wiederholt, J.L., & Hammill, D.D. Use of the Frostig-Horne visual perception program in the urban school. *Psychology in the Schools,* 1971, *8*(3), 268–274.

Effects of Sesame Street and The Electric Company on Reading

Question I am the reading and language arts teacher in a kindergarten and primary grades team. Recently, we have been thinking about incorporating *Sesame Street* and *The Electric Company* into our reading instructional program. The district's curriculum coordinator has asked the team to justify the use of television in the curriculum. We know the students enjoy the programs, and we have heard that watching the shows improves reading. Can you give us some specific information? Does watching shows like *Sesame Street* and *The Electric Company* really improve reading? How should these TV shows be used for reading instructional purposes?

Discussion Both *Sesame Street* and *The Electric Company* were experiments in television programming. Because they are novel in concept and design, they have received a great deal of attention from their beginning. Although there certainly have been vocal critics of these educational programs, for the most part the reviews have been quite positive. Many experts in television and education have served as consultants to the producers, and this practice has resulted in ongoing changes and improvements in programming. In addition, research has been conducted on a continuing basis to evaluate the effectiveness of the shows and the extent to which their stated goals have been attained. Results of these evaluations indicate that these two television experiments have had positive effects on the prereading and reading skills of the 3- to 10-year-old population that has been studied.

The results of the *Sesame Street* evaluations show that the program achieves its goals. *Sesame Street* was originally designed to teach certain prereading skills to children who are from 3 to 5 years old. These curriculum goals, although changing somewhat from year to year, consistently focus on a range of visual and auditory perceptual skills, including left-to-right sequencing, figure-ground discriminating, blending, rhyming, and recognizing letters. Research results suggest that young children who frequently watch *Sesame Street* show greater mastery of these readiness skills than children who are not regular viewers. Furthermore, it is clear that the more children watch the show, the better they are at performing certain tasks. As might be expected, viewers show the greatest gains in letter and number recognition, the areas stressed most on the programs. These patterns hold true for all groups of children, regardless of age, sex, socioeconomic status, mental ability, or geographic location.

The Electric Company, modeled in part after *Sesame Street* and inspired by its success, was designed to teach reading skills to second, third, and fourth graders who have difficulty learning to read. The show acts as a supplement to regular classroom reading instruction. Its emphasis is on decoding and the development of word recognition skills through strategies such as sound blending and scanning for patterns of letter combinations. After initial evaluations of the program, educators and producers agreed that, although it should maintain a decoding emphasis, the program should provide more opportunities for meaningful reading. As a result, words, sentences and even short stories have been introduced to expose viewers to reading in a broader sense.

Research results indicate that students who frequently watch *The Electric Company* in school show greater gains on standard measures of reading achievement than their non-viewing schoolmates. It appears that watching *The Electric Company*, in addition to regular reading instruction, is more effective than regular classroom reading instruction alone. Children reading at low, average, or high levels all show positive effects from regular classroom viewing. The gains are much more dramatic in the lower than in the upper grades. Third and fourth graders have mastered, for the most part, the skills taught on *The Electric Company* and therefore show only limited growth from watching the program. The research also indicates that children who are in their second year of watching *The Electric Company* tend to make smaller gains than those children in their first year of viewing. This leads to the belief that the skills taught on the show are usually mastered in a year.

Although *The Electric Company* was originally intended for home viewing, evaluations of the effects of home viewing are inconclusive. Furthermore, some educators are concerned that public television is not reaching the homes of disadvantaged children as extensively as it is reaching those of middle-class children. Any conclusions we might draw concerning the benefits of home viewing of these programs, therefore, must be guarded. In spite of the original intentions of the show's producers, however, *The Electric Company* has been gaining popularity in classrooms across the country and is used increasingly as a regular component of school-based reading instruction.

There is some evidence to suggest that the teacher's attitude toward viewing the show, as well as the degree of integration of the program in the total reading curriculum, influences *The Electric Company*'s effectiveness as an instructional tool. Certainly, common sense tells us that teacher-directed activities related to skills taught on the program should enhance the effects of viewing. Teachers who have adopted regular viewing in the classroom do, for the most part, appear to be implementing related follow-up activities. The producers of *The Electric Company* have published instructional materials to use in conjunction with classroom viewing, hoping to promote this practice.

Summary

Cookie Monster, Big Bird, Easy Reader, and Letterman are apparently good teachers. Research results have demonstrated that large numbers of children are watching *Sesame Street* and *The Electric Company* and that the frequent viewers show greater gains in reading and prereading skills than their non-viewing peers. Research results therefore support the practice of using these shows in addition to the traditional classroom reading program and suggest that related follow-up activities will enhance the shows' effectiveness. It is extremely important, however, that teachers carefully evaluate the skill level of each child before including *Sesame Street* or *The Electric Company* in the reading instructional program. If the skills being covered on a given program segment have already been mastered by individual students, we think that alternate instruction during viewing time would be more advantageous for them.

Suggested Reading

*Ball, S., & Bogatz, G.A. Research on *Sesame Street*: Some implications for compensatory education. In J. Stanley (Ed.), *Compensatory Education for children ages two to eight: Recent studies on educational intervention*. Baltimore, MD: Johns Hopkins Press, 1973.

*Ball, S., Bogatz, G., Kazarow, K., & Rubin, D. *Reading with television: A follow-up evaluation of The Electric Company*. Princeton, NJ: Educational Testing Service, 1974. (ERIC Document Reproduction Service No. ED 122 798)

Bogatz, G.A., & Ball, S. *The second year of Sesame Street: A continuing evaluation* (Vols. 1 & 2). Princeton, NJ: Educational Testing Service, 1971. (ERIC Document Reproduction Service Nos. ED 122 800 & ED 122 801)

Children's Television Workshop. *Five years of The Electric Company*. New York: Children's Television Workshop, 1976 (ERIC Document Reproduction Service No. ED 122 805)

Cook, T.D., Appleton, H., Conner, R., Shaffer, A., Tamkin, G., & Weber, S. *Sesame Street revisited: A case study in evaluation research*. New York: Russell Sage Foundation, 1975.

*Gibbon, S. Y., Palmer, E.L., & Fowles, B.R. *Sesame Street, The Electric Company and reading*. In J.B. Carroll & J.S. Chall (Eds.), *Toward a literate society: A report from the National Academy of Education*. New York: McGraw-Hill, 1975.

Herriott, R.E., & Liebert, R.J. *The Electric Company in-school utilization study: The 1971–72 school and teacher surveys*. New York: Children's Television

Workshop, 1972. (ERIC Document Reproduction Service No. ED 973 709)

Lesser, G.S. *Children and television: Lessons from Sesame Street*. New York: Random House, 1974.

Reading Readiness Tests

Question I teach first grade. Every spring a readiness test is administered to the kindergarten students, and I receive the results in preparation for teaching them in the fall. I try to plan instruction to meet the individual needs of my students, but, frankly, I do not know how to use readiness test scores for this purpose. Of what use are reading readiness test scores? I have heard that readiness test scores are predictors of later reading achievement. What exactly does this mean?

Discussion There are a large number of readiness tests available, and they are likely to vary in content, format, and purpose. It is therefore difficult to discuss readiness tests as if they were all the same. However, there is a body of research literature on the effectiveness of certain readiness tests as predictors of later reading achievement, and it is the findings of this research that are reflected in our discussion. The conclusions reached here, of course, cannot be applied to all reading readiness tests currently available.

Readiness tests typically are used for one or two main purposes: prediction or diagnosis. Many readiness tests are group-administered, standardized, and norm-referenced. Some readers may want to review the concept of a norm-referenced test before reading our recommendations for their use.

A norm-referenced test reports a score (or group of scores) that tells how any given student compares to others who have taken the test. Each student is ranked so that you know, for example, what percentage of test-takers scored above or below that student (a percentile rank) or whether the student has achieved what is thought to be the expected level for the grade he or she is in (a grade equivalent score). The items on norm-referenced tests are selected so that students' scores are distributed according to a predetermined pattern, that is, a certain percentage of students *has* to score poorly, a certain percentage *has* to do well, and a certain percentage *has* to be average. Norm-referenced tests tell you how your students compare to a national average. Norm-referenced tests cannot tell you whether students have mastered a specific body of knowledge; that is, it is difficult to determine a student's precise skill strengths and weaknesses from norm-referenced tests. In other words, a norm-referenced test is neither diagnostic nor prescriptive; it doesn't reveal exactly what is wrong with a student or what to do about it.

Norm-referenced reading readiness tests provide the same kind of information that other norm-referenced tests provide. In addition, they can be used to predict, with a certain degree of accuracy, how a student will achieve in learning to read. The degree of accuracy varies with the test or subtest used, the time of administration (e.g., end of kindergarten or beginning of first grade), and the individual. In addition to reading readiness test and subtest scores, there has been a great deal of research on a variety of other early predictors of reading achievement. Teacher judgments, tests of numerical concepts, and mental ability test scores have also been examined as predictors of reading achievement. It is interesting to note that readiness test scores appear to be no more accurate in their predictability than any of these other measures. Readiness test predictions are more likely to be valid for good students than for poor ones, and for individual cases there are likely to be errors in prediction.

Why would schools want to predict future reading success or failure? It seems to us that prediction is best warranted when intervention is the result. A child who scores poorly on a predictive measure should be given the opportunity to benefit from early intervention and the best teaching available. Some would label this *diagnosis*, not *prediction*. Do readiness tests serve this diagnostic function well?

Our answer must be guarded. Again, the great variability among tests and within tests prohibits us from reaching definitive conclusions. Some researchers think that subtests that are similar to standard learning situations are more revealing than others. There are also researchers and educators who contend that subtests that measure phonemic analysis skills are of great importance (for a discussion of these skills see *Reading Readiness: Skills that Enhance Reading Acquisition*). But many subtests are considered to be too short to be reliable. In general, it appears that the diagnostic validity of readiness tests depends a great deal on a teacher's good sense and experience in interpreting specific test results.

Because of the shortcomings we have mentioned, it is important not to place too much emphasis on reading readiness test scores. Such scores, however, can be helpful in early identification of children who will (or will not) have trouble learning to read, and they can help in initially grouping children for instruction. Given the high error in predicting reading achievement, readiness test scores alone should not be used to make decisions about a child. You should use all available information, including your own judgments, to guide you in making instructional decisions. Perhaps the most important factor for planning reading instruction is to carefully assess each child's classroom progress to date; certainly this is at least as important as tests given on some past date.

Summary Reading readiness test scores can be used to predict reading achievement, but in general these scores are no better as predictors than teachers' judgments, mental ability test scores, or even scores on tests of numerical concepts. Because of the nature of most reading readiness tests, they probably are not useful for diagnosis of specific skill deficiencies or for planning the precise course of instruction. These decisions are made more reliably on the basis of children's actual prereading and reading classroom performance. For this reason we recommend selection of readiness tests with formats that closely approximate the classroom learning situation. Selection of a readiness test that includes measurement of phoneme analysis skills is also advised. Along with other sources of information, reading readiness test scores can be used to make tentative decisions about grouping for classroom instruction, and they can be helpful in identifying children who may have trouble learning to read and would benefit from early intervention.

Suggested Reading

*Barrett, T. Predicting reading achievement through readiness tests. In J. Figurel (Ed.), *Reading and inquiry*. Newark, DE: International Reading Association, 1965.

Buros, O. (Ed.). *The seventh mental measurements yearbook*. Highland Park, NJ: Gryphon Press, 1972. (See reviews of readiness tests).

de Hirsch, K., & Jansky, J. Early prediction of reading, writing and spelling ability. In M. Johnson & R. Kress (Eds.), *Corrective reading in the elementary classroom*. Newark, DE: International Reading Association, 1967.

*Downing, J., & Thackray, D.V. *Reading readiness*. London: Hodder Stoughton, 1975.

*Dykstra, R. The use of reading readiness tests for prediction and diagnosis: A critique. In T. Barrett (Ed.), *The evaluation of children's reading achievement*. Newark, DE: International Reading Association, 1967.

Farr, R. *Tests of reading readiness and achievement: A review and evaluation*. Newark, DE: International Reading Association, 1969.

MacGinitie, W. Evaluating readiness for learning to read: A critical review and evaluation of research. *Reading Research Quarterly*, 1968–69, 4(3), 396–410.

Stevenson, H., Parker, T., Wilkinson, A., Hegion, A., & Fish, E. Predictive value of teacher's ratings of young children. *Journal of Educational Psychology*, 1976, *68*(5), 507–517.

Developing Reading Skill (Early Stages of Reading)

The Relationship between Decoding and Comprehension

Question

I am a second-grade teacher, and I have used several different approaches and sets of materials for reading instruction during the ten years that I have taught. In recent years I have been concentrating more on phonics. With all the talk about poor comprehension and declining achievement test scores, I am worried that by stressing decoding I may be hampering comprehension, I would like to know the best combination of decoding and comprehension instruction for developing proficient reading during the first three grades.

Discussion

We cannot give a formula for the best combination of decoding and comprehension. However, we can explain how theorists and researchers view the relationship between decoding and comprehension.

For many theorists and researchers, the process of reading is viewed as a complex of interrelated subprocesses (for additional discussion see *The Nature of Reading and Its Instruction: Subskill and Holistic Approaches to Reading Instruction*). The reader has to perform a combination of these subprocesses simultaneously and extremely rapidly for good comprehension to occur. Because people have limited attention and memory resources to use during the act of reading, the proper balance of subprocesses is very important. Under some conditions, if attention is devoted to one aspect of reading, then other aspects may suffer. For example, students who have poor decoding skills (i.e., inaccurate or slow) have to devote so much attention to decoding words that they do not have adequate resources to devote to comprehension. To shift the balance in favor of comprehension, decoding skills must be developed to the point where they are not just accurate but automatic—where little or virtually no attention to them is required. Maximal attention can then be devoted to comprehension processes. Does this strategy mean that automatic decoding guarantees good comprehension? No, but poor decoding usually interferes with comprehension.

The point of view described above suggests that early reading instruction should focus on developing decoding skills to the point where they are automatic. The implication is that somehow comprehension will occur or that it can be worked on after decoding is "perfected." Is this wise, or will comprehension suffer in later years if early reading concentrates exclusively on decoding?

The existing research evidence generally suggests that comprehension will not suffer from an early decoding emphasis. But, if reading instruction emphasizes developing decoding accuracy and speed and deemphasizes comprehension for the first two or three years, how are children likely to define reading? They may come to think that decoding is reading, that is, that all you have to do is recognize the words and you are reading. Such a view of reading surely would not encourage students to think about what has been read, and the probable lack of enjoyment of such an activity may discourage them from reading at all.

Although we cannot provide a formula for balancing decoding and comprehension instruction in the early grades, we do recognize the critical importance of automatic decoding for comprehension. Therefore, we suggest that decoding be a primary objective of early reading instruction. This view does not exclude attention to comprehension—instruction can stress both decoding and comprehension. Space does not allow us extensive elaboration, but we shall list several examples of instruction that emphasizes both decoding and comprehension. We hope these examples will make our view clear and that they will suggest other instructional procedures to you.

1. Make decoding instruction meaningful, that is, with a predominant use of real words. Intersperse practice on words with practice on decoding syllables. We suggest use of only those syllables that obey the spelling rules or patterns of the language.

2. Be sure students demonstrate that they understand the materials they decode. Ask them questions about what they have read, have them read material that requires the students to follow directions given in the material, have them act out stories, and so on.

3. Give students a lot of practice reading books, magazines, and so forth, that are appropriate to their reading level. Provide students with ample opportunity to apply their decoding skills to meaningful and enjoyable materials. Make sure that students learn to identify and use new words in context.

4. Inform students that the purpose of reading is comprehension and that working on decoding and learning to recognize words rapidly will help comprehension.

Summary

A precise formula for combining decoding and comprehension instruction in the early grades is not possible. But, comprehension will suffer if decoding is not automatic. Consequently, we recommend that expert and automatic decoding be a primary goal of early grades reading instruction.

We think that it is also important and possible to develop decoding and at the same time stress comprehension. Two of many possible ways to combine decoding and comprehension instruction in early grades are (1) expose students to materials and teaching techniques that require demonstration of comprehension and (2) have students apply their newly acquired decoding skills to the reading of enjoyable books.

Suggested Reading

Beck, I. Comprehension during the acquisition of decoding skills. In J. Guthrie (Ed.), *Cognition, curriculum, and comprehension*. Newark, DE: International Reading Association, 1977.

Bond, G., & Dykstra, R. The cooperative research program in first-grade reading instruction. *Reading Research Quarterly*, 1966–67, *2*(4), 5–142.

*Chall, J. *Learning to read: The great debate*. New York: McGraw-Hill, 1967.

Gibson, E., & Levin, H. *The psychology of reading*. Cambridge: MIT Press, 1975.

Goodman, K. Decoding—From code to what? *Journal of Reading*, 1971, *14*(7), 455–462.

LaBerge, D., & Samuels, S.J. Toward a theory of automatic information processing in reading. In H. Singer & R. Ruddell (Eds.), *Theoretical models and processes of reading*. Newark, DE: International Reading Association, 1976.

Perfetti, C., & Lesgold, A. Coding and comprehension in skilled reading and implications for reading instruction. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

Popp, H. Current practices in the teaching of beginning reading. In J. Carroll & J. Chall (Eds.), *Toward a literate society*. New York: McGraw-Hill, 1975.

*Samuels, S.J. Automatic decoding and reading comprehension. *Language Arts*, 1976, *53*(3), 323–325.

Shankweiler, D., & Liberman, I. Misreading: A search for causes. In J. Kavanagh & I. Mattingly (Eds.), *Language by ear and by eye: The relationships between speech and reading*. Cambridge: MIT Press, 1972.

Phonics or Whole Word Approach to Beginning Reading

Question I am completing my first year as a first-grade teacher. According to the results of the spring achievement testing, my group made an average of only five months' gain in reading. During the year I "went by the book"; with few changes, I followed the teacher's manual in the basal reading series. But now my students cannot sound out new words very well. I would really like to do better next year. Would an emphasis on phonics help?

Discussion Before discussing this question, we need to make a point about test scores and one about the approach represented in the basal series being used by this teacher. First, if the emphasis of the instructional program differs greatly from that of the test, then scores are likely to be lower than they would be if there were a better match between the skills taught and those measured. Second, although the teacher was not explicit, it appears from the description that the basal series is one that in the beginning emphasizes learning whole words by "sight" rather than by blending together the sounds represented by the letters. It seems to us that the question being asked is whether an early emphasis on phonics or code teaching is superior to a whole word emphasis. This issue is the topic of our discussion.

A whole word approach to reading is based on the belief that beginning readers must be exposed to activities similar to those of mature readers if the goal of reading—comprehension—is to be achieved. Because mature readers do not read letter-by-letter or sound-by-sound, whole word proponents do not believe reading should be taught this way. Instead, they view words as more natural and thus easier to learn than meaningless phonemic elements (individual sounds) and recommend an early emphasis on the meaningful units of our language.

A synthetic phonics approach to reading, on the other hand, is characterized by teaching sounds of letters and/or letter groups that are then blended into words.* Proponents of phonics instruction believe that because our written language is alphabetic, learning the alphabetic principle unlocks the key to reading. Unlike a whole word method, they argue, a phonics method teaches students letter-sound correspondences that they can use to recognize words they have never seen before.

Does research support the use of one approach over the other? This is a difficult question to answer because interpreting research conducted to compare beginning reading approaches has many problems. For example, no teacher uses one method exclusively, so evaluations don't really get at just one method. In addition, program evaluations are conducted with large groups of students, which tends to mask individual differences. A third problem, as with most research, is that the results are often confusing or contradictory, and, taken one study at a time, they are difficult to explain. Despite these and other difficulties, the trend of the results of many program evaluations and comparisons is that methods that emphasize earlier and more systematic instruction in phonics tend to produce readers who learn to identify printed words earlier than those that stress whole word instruction.

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*In contrast, an analytic phonics approach is characterized by analyzing whole words into their constituent phonemic elements.

Apparently, an initial systematic code emphasis helps children discover the regularities of the letter-sound correspondences in our language, and this leads to an early superiority in word recognition skills. However, this holds true more often for children of low and average ability than for those of high ability. In general, it appears that more able students learn to read well by either method of instruction—one that emphasizes code or meaning.

In response to this teacher's question, we suggest that an early and highly structured emphasis on letter-sound correspondences enables students to become more proficient at identifying new words. However, it is important that we qualify this answer. First, although phonics skills are important, they are not sufficient for success in reading. Teaching the code should not be the only reading instruction offered in the early grades; an approach that emphasizes both decoding and comprehension is probably the most sensible. (See *Developing Reading Skill: The Relationship between Decoding and Comprehension.*) Second, as we mentioned above, individual differences exist—not all students learn to read by the same method. Common sense suggests that a teacher who evaluates each child's progress and modifies instruction accordingly is likely to produce more good readers than one who chooses a single method and never deviates from it.

Summary Despite the difficulties in conducting and interpreting research on reading program comparisons, the results tend to favor early and systematic code instruction over a whole word approach. Therefore, we recommend that early reading instruction include an emphasis on the alphabetic code. We do not think that teaching coding skills is sufficient to produce good readers and strongly suggest that instruction include reading words in context and a good deal of attention to meaning.

Suggested Reading

*Becker, W. C. Teaching reading and language to the disadvantaged—what we have learned from field research. *Harvard Educational Review*, 1977, 47(4), 518–534.

Bleismer, E., & Yarborough, B. A comparison of ten different reading programs in first grade. *Phi Delta Kappan*, 1965, *46*, 500–504.

*Bond, G., & Dykstra, R. The cooperative research program in first-grade reading instruction. *Reading Research Quarterly*, 1966–67, *2*(4), 5–142.

Chall, J., & Feldmann, S. First grade reading: An analysis of the interactions of professed methods, teacher implementation, and child background. *The Reading Teacher*, 1966, *19*(8), 569–575.

*Chall, J. *Learning to read: The great debate*. New York: McGraw-Hill, 1967.

Diederich, P. *Research 1960–1970 on methods and materials in reading* (ERIC TM Report 22). Princeton, NJ: Educational Testing Service, 1973.

*Dykstra, R. Research and evaluation. In C. Walcutt, J. Lamport & G. McCracken (Eds.), *Teaching reading*. New York: MacMillan, 1974.

Dykstra, R. Summary of the second-grade phase of the cooperative research program in primary reading instruction. *Reading Research Quarterly,* 1968–69, 4(1), 49–70.

Jeffrey, W., & Samuels, S.J. Effect of method of reading training on initial learning transfer. *Journal of Verbal Learning and Verbal Behavior,* 1967, 6, 354–358.

Language Experience as an Approach to Beginning Reading

Question I teach in a school that serves mainly low income students. Typically, I begin the school year by having my first graders tell, write (I take dictation), and listen to a lot of stories and share experiences. My neighbor, who also teaches first grade, criticizes me for this practice. He says, "Phonics instruction is the only effective way to teach beginning reading." I think that the language experience approach helps my students to read, but I wonder whether it ought to be used exclusively for teaching reading? If not, would it be helpful to combine language experience with phonics?

Discussion The language experience approach is based on the theory that reading and comprehending written language is an extension of listening to and understanding spoken language. Proponents of this approach contend that children are more motivated and learn to read more easily when the written language they are exposed to is closely matched to their spoken language. The purpose of early reading is to teach children, or make them aware of, the correspondence between spoken and written language, and the language of children is recommended as the core of early reading materials. Children tell stories that teachers transcribe and write the materials themselves when they are able. These stories and other student-produced materials become the texts for learning to read.

Skills instruction, particularly phonics, is not necessarily excluded from the language experience approach. But, rather than being systematically taught to all students, skills typically are taught as the need for them arises, using the materials the children create, and only to those students who need such instruction.

Given the present state of research on the language experience approach, we can draw only tentative and limited conclusions about its effectiveness as a method of reading instruction. The research comparing methods of instruction has some serious difficulties (see also *Developing Reading Skill: Phonics or Whole Word Approach to Beginning Reading*). For example, results of research often reveal greater variability within one method of instruction than between different methods. Moreover, the teacher and the quality of instruction appear to affect reading achievement more than the particular method used to teach reading. Results such as these make it very difficult to offer research-based suggestions for evaluating the language experience approach.

The specific comparison of language experience and phonics approaches is further complicated by the fact that the language experience approach has not been researched and developed as extensively as have the approaches that emphasize coding skills, such as phonics. Approaches emphasizing phonics have been subjected to much research-based development and evaluation. Comparing any of them to the language experience approach, which has not been as systematically developed and tested, seems inappropriate. To draw instructional implications and make educational recommendations from such a comparison would not be desirable.

We do recognize that teachers must make instructional choices and cannot wait for research on the language experience approach to "catch up" with that on phonics. Therefore, we offer an opinion based on our current knowledge, fully realizing that it is limited. According to current information, an initial emphasis on teaching coding skills does result in good word recognition skills for a large proportion of students. (See *Developing Reading Skill: The Relationship between Decoding and Comprehension* and *Developing Reading Skill: Phonics or Whole Word Approach to Beginning Reading*.) However, word recognition alone is not reading; any approach used to teach reading—whether phonics, the language experience approach, or another approach—should be supplemented with instruction that develops comprehension and other language skills.

An examination of the research that does exist reveals that the language experience approach is about as effective as the traditional whole word or basal method. We cannot recommend any of these methods as the best approach for teaching word recognition skills.

Summary

The research results currently available suggest that an initial instructional emphasis on the alphabetic code results in good word recognition skills. Based on this evidence, code teaching is recommended in beginning reading instruction. The language experience approach appears to be as effective a means of teaching initial reading as the traditional whole word or basal method and could be incorporated as part of a total early reading program.

The language experience approach is not as thoroughly researched and evaluated as code-based methods. Therefore, until results based on more comprehensive research are available, we cannot make definitive statements regarding the most effective use of the language experience approach in the elementary classroom.

Suggested Reading

Bond, G., & Dykstra, R. The cooperative research program in first-grade reading instruction. *Reading Research Quarterly*, 1966–67, *2*(4), 5–142.

Dykstra, R. Summary of the second-grade phase of the cooperative research program in primary reading instruction. *Reading Research Quarterly*, 1968–69, 4(1), 49–70.

Goodman, K. Learning to read is natural. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

*Hall, M. *The language experience approach for teaching reading: A research perspective*. Newark, DE: ERIC Clearinghouse on Reading and Communication Skills and International Reading Association, 1978.

*Harris, A., & Serwer, B. Comparing reading approaches in first grade teaching with disadvantaged children. *The Reading Teacher*, 1966, *19*(3), 631–635.

Kendrick, W., & Bennett, C. A comparative study of two first-grade language arts programs. *Reading Research Quarterly*, 1966–67, *2*(1), 83–118.

*Resnick, L. *Theory and practice in beginning reading instruction*. Hillsdale, NJ: Erlbaum, in press.

*Stauffer, R., & Hammond, D. The effectiveness of language arts and basal reader approaches to first grade reading instruction—extended into second grade. *The Reading Teacher*, 1967, *20*(8), 740–746.

Stauffer, R., & Hammond, D. The effectiveness of language arts and basal reader approaches to first grade reading instruction—extended into third grade. *Reading Research Quarterly*, 1968–69, 4(4), 468–499.

Tatham, S. Reading comprehension of materials with select oral language patterns: A study of grades two and four. *Reading Research Quarterly*, 1969–70, 5(3), 402–426.

Standard Black English and Reading Interference

Question I am the principal of a recently desegregated, low income inner city elementary school. I've just received the results of last year's testing program, and, if the scores are accurate, many of the black students in the school have very poor reading skills. Several of the primary grades teachers have expressed concern that the black children don't speak "proper English." The teachers think that their vocabulary is different, that they don't pronounce words properly, and that they do not speak in grammatical sentences. Does black dialect speech interfere with learning to read? If it does, what can my teachers do to reduce the interference?

Discussion A consistent finding in research on reading is that black children from low income families score lower on tests of reading competence than do children from wealthier families. The explanation for this relationship is unclear and has been the source of considerable controversy. One explanation is that many black children speak a dialect of English (referred to here as standard Black English) and that this language difference is the major source of interference in learning to read. In what ways does standard Black English differ from standard English? Has research supported any or all of these differences as sources of interference in learning to read?

The major differences between standard Black

English and standard English are in vocabulary, pronunciation, and grammar. We will briefly discuss each of these features and the evidence (or lack of evidence) for each as a source of reading interference.

Vocabulary. It is true that speakers of standard Black English use some words that speakers of standard English do not use. But, this probably does not indicate that black children do not understand the vocabulary used in school books and by teachers who speak standard English. First, all young children speak somewhat differently from their teachers, and oral speech is very different from written language. Second, most children are exposed to and understand a much larger vocabulary than they use. Third, the differences in vocabulary between standard Black English and standard English are much smaller than the similarities. And fourth, the vocabulary used in the primary grades reading materials typically is simple and is likely to be known by nearly all beginning readers. For all these reasons it is highly unlikely that vocabulary differences interfere in any direct way with learning to read.

Pronunciation. Unlike vocabulary, where differences are fairly simple, differences in pronunciation are not. One difference is the dropping of certain final consonants in standard Black English. The result is that words that are spelled differently and have different meanings are sometimes pronounced the same. For example, some black children might pronounce *hole* and *hold* or *past* and *pass* the same. Because of the emphasis on letter-sound relationships in many beginning reading programs, it would seem that not hearing the differences or not pronouncing the letter-sound pairs as they are taught could lead to confusion. Does it?

There is preliminary evidence to suggest that these pronunciation differences are relatively unimportant and do not directly interfere with learning to read. Although black children may not be able to tell the difference between, say, *hole* and *hold* when the words are said to them in isolation, they generally appear to have no trouble distinguishing the differences in meaning when the words are used in sentences. (This is analogous to the ability of most readers to distinguish the meaning of *sun* from *son*.) Thus, it seems that although pronunciation differs between standard Black English and standard English speakers, this difference does not interfere with comprehension. Whether or how these differences interfere with actually acquiring knowledge of the letter-sound correspondences is not yet known.

Grammar. There are several major grammatical variations of standard English that are used by many speakers of standard Black English. For example, use of the verb *to be* is different in several ways: *she laughing* instead of *she is laughing* and *I be going* instead of *I am going* are examples of these differences. This is only one of a number of different constructions that, taken together, could cause confusion in learning to read. Do they?

Most research conducted to study this problem has tried to show that black children read and understand better when texts are written using features of standard English. Although the results generally support the "no interference" point of view, there are several problems. First, the evidence that reading is not improved using texts that are written in standard Black English does not necessarily imply that speaking with black dialect grammatical constructions is not a source of interference. Second, the research itself has been criticized for being conducted with too few students, not being sure that all students used the constructions under investigation in their spontaneous speech, and so on. Thus, although there is indirect support for the notion that grammatical differences are not a source of interference, the support must be interpreted cautiously, and the conclusions drawn from it need to remain highly tentative until more information is available.

If vocabulary, pronunciation, and grammar probably are not sources of interference in learning to read, why do so many black children have so much trouble?

Recently, many individuals have suggested that cultural and socioeconomic differences between black students and their teachers may be a greater source of interference than the differences between oral and written language. Some teachers may hold black children in low esteem, have low expectations for their scholastic success, or believe that standard Black English speech is inferior and stems from low intelligence. Attitudes such as these could have a profoundly negative effect on children trying to learn to read. Although research is far from complete on this topic, we think that teachers' attitudes and expectations have a great impact on students' motivation and performance and that the negative effects of these factors are very likely to interfere with learning to read.

What should be done? Several alternatives have been suggested. They are: (a) teach standard Black English speakers standard English before teaching them to read; (b) teach reading using materials that are "neutral" and avoid vocabulary and grammatical features that are different; (c) produce materials that are written in standard Black English and use them to teach reading; (d) teach reading with a language experience approach where children generate the reading materials using their own language; and (e) change teachers' attitudes to allow for standard black speech and standard black renditions of texts written in standard English. The first alternative has not worked—black speech persists. Furthermore, this suggestion for change implies that black speech is inadequate and interferes with reading acquisition. Since it probably does not interfere, the alternative is not appropriate. The second alternative would be very hard to do, and the resulting materials would probably be stilted. Producing and using reading materials written in standard Black English has problems, discussed in another section (*Developing Reading Skill: Teaching Black Children to Read with Materials Written in Standard Black English*), that make testing the suggestion very difficult. Using a language experience approach may be useful for this narrow purpose, but research evidence suggests this approach is not the optimal method for beginning reading instruction. (See *Developing Reading Skill: Language Experience as an Approach to Beginning Reading.*) We and others think that changing teachers' attitudes, although slow, may be the best of these approaches. In fact, if teachers' attitudes and expectations about black children are a major source of early reading difficulties, then changing attitudes is a must.

In what ways might attitudes be changed? Teachers should be informed that standard Black English may be different from standard English but that it is not inferior and speaking it does not indicate low ability. Teachers should learn about the features of standard Black English and the characteristics that distinguish it from standard English so that they do not automatically interpret dialect renditions of text as errors indicating reading or comprehension problems. Furthermore, they should learn to distinguish between dialect and an oral reading error by using meaning as a criterion. If a student pronounces a word differently from the way the teacher would pronounce it but still understands the meaning of the sentence, it is probably a dialectal difference, not a reading error. And most important, they should be informed that dialect per se is unlikely to interfere directly with learning to read.

Summary

Although the evidence is preliminary, it seems likely that speaking standard Black English does not interfere with learning to read. Vocabulary, pronunciation, and grammar differ between speakers of standard Black English and those of standard English, but apparently not enough to directly interfere. Teachers' attitudes about and expectations for students who speak black dialect may be a greater source of interference than language differences. That is, teachers may view standard Black English speech as an inferior form of English, one that is inadequate for the demands of school learning, and this view may lead teachers to expect less from black children. In turn, black children may come to think and expect less of themselves and, indeed, have difficulty learning to read. While the research to support such claims is scarce, both the research and expert opinion are growing in support of this position.

We recommend that an effort be made to change teachers' attitudes. We suggest that they become familiar with features of standard Black English, learn to distinguish reading errors from dialect features, and be informed of the research and expert opinion suggesting that speaking standard Black English does not interfere with learning to read.

Suggested Reading

Baratz, J.C., & Shuy, R. (Eds.) *Teaching black children to read.* Washington, DC: Center for Applied Linguistics, 1969.

*Goodman, K. Dialect barriers to reading comprehension. *Elementary English*, 1965, *42*(8), 853–860.

Hall, V., & Turner, R. The validity of the "different language explanation" for poor scholastic performance by black students. *Review of Educational Research*, 1974, *44*(1), 69–81.

Melmed, P. Black English phonology: The question of reading interference. *Monographs of the language-behavior research laboratory*, University of California, Berkeley, 1970 (No. 1).

Nolen, P. Reading nonstandard dialect materials: A study at grades two and four. *Child Development*, 1972, *43*(3), 1092–1097.

Piestrup, A. Black dialect interference and accommodation of reading instruction in first grade. *Monographs of the language-behavior research laboratory*, University of California, Berkeley, 1973 (No. 4).

Rystrom, R. Dialect training and reading: A further look. *Reading Research Quarterly*, 1969–70, *5*(4), 581–599.

Seitz, V. *Social class and ethnic group differences in learning to read.* Newark, DE: International Reading Association, 1977.

*Shuy, R. The mismatch of child language and school language: Implications of beginning reading instruction. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

*Simons, H. Black dialect phonology and word recognition. *Journal of Educational Research*, 1975, *68*(2), 67–70.

Simons, H. Black dialect, reading interference and classroom interaction. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

Tatham, S. Reading comprehension of materials with select oral language patterns: A study of grades two and four. *Reading Research Quarterly*, 1969–70, 5(3), 402–426.

*Wolfram, W. Sociolinguistic alternatives in teaching reading to nonstandard speakers. *Reading Research Quarterly*, 1970–71, *6*(1), 9–33.

Teaching Black Children to Read with Materials Written in Standard Black English

Question I am the principal in a predominantly black elementary school. One of the second-grade teachers has suggested that we consider using materials written in black dialect for teaching beginning reading. He is concerned that the reading problems that many of our students evidence stem from differences between the language most of the children speak (standard Black English) and that used in the reading program (standard English). How useful for teaching black children to read are materials written in standard Black English?

Discussion In recent years a number of studies have been undertaken to test this question. In general, they have not been very successful. One project used reading materials written in two versions—standard Black English and standard English. Children taught with the standard Black English materials were not significantly better in reading than children who did not use the materials. One positive outcome, however, is that there was some indication that teachers' attitudes changed. It seems that teachers' attitudes and behaviors toward black children's speech were improved by their exposure to the materials. (For a discussion of the effects of teachers' attitudes on black children's learning to read see *Developing Reading Skill: Standard Black English and Reading Interference.*)

In another project, materials written exclusively in standard Black English were developed but were not used because parents and other black adults were unwilling to accept them; their objections were so intense that the project was abandoned. Apparently, many black parents view black speech as an impediment to socioeconomic mobility. Thus, exposure only to standard Black English and not to standard English could be construed as an effort to deny black children one of the tools needed for advancement. Furthermore, it seems that people in general regard the written word as something sacred and find anything but its traditional form unacceptable.

The two projects described briefly here are fairly typical of efforts to improve reading by using materials written in standard Black English; they have for the most part been unsuccessful. Although adequate testing of such reading programs has been thwarted for the socio-political reasons mentioned above, the research that has been conducted in this area has not demonstrated that standard Black English readers are more effective than standard English reading materials. Reading is generally not improved by using these texts. What explanations have been offered by researchers for these findings?

First, although some researchers suggest that speakers of standard Black English might actually show improvement in reading if taught with materials in their own speech, the new readers used in their research may not have been written in the children's language. Written language always differs from spoken language, not all black children speak standard Black English, and there is great variation in speech among those who do speak it. If materials actually could be written to conform to each child's speech, then reading might indeed improve with their use. The tremendous impracticality of this approach is overwhelming and prevents it from being tested.

Second, it seems that speakers of nonstandard English are actually bidialectical; that is, although they express themselves in a language that is different from standard English, they do, in fact, fully comprehend standard English. Research findings have demonstrated that speakers of nonstandard dialects apparently develop a facility for "translating" materials from one dialect to another. Although their expressive speech conforms to that of their community, this does not, as far as we can determine, indicate significant interference in the comprehension of standard English dialect. (For additional discussion of interference see *Developing Reading Skill: Standard Black English and Reading Interference.*)

Based on our present knowledge concerning the effectiveness of reading materials written in standard Black English, we do not recommend using these materials to teach black children to read. Instead, we suggest using standard texts and allowing children to produce standard Black English renditions of these materials. This is not a simple matter; it requires that teachers be familiar with and understand standard Black English speech. Although we think it is important for educators to accept variations of standard English and allow children to use such variations in the classroom, it is at the same time critical that actual reading errors not be overlooked. Unfortunately, it is beyond the scope of this discussion to detail adequately those deviations from text that are dialect variations and those that are, for teaching purposes, errors of decoding. We strongly recommend that teachers devote considerable effort to understanding the speech and language patterns of their students; reading the set of references listed at the end of this discussion is a good place to start.

Summary

We do not recommend using standard Black English readers to teach reading to children who speak standard Black English. There are several reasons for this recommendation. First, since not all speakers of standard Black English speak the same or always use the patterns associated with standard Black English, resulting materials would only reflect the speech of some speakers. Second, attempts to test these reading materials have been very poorly received in the black community. Finally, research has not demonstrated the effectiveness of these materials over those written in standard English. We suggest instead that teachers use standard reading materials and, based on familiarity with and sensitivity to black speech, allow for some deviations from the text as written.

Suggested Reading

Baratz, J.C., & Shuy, R. (Eds.) *Teaching black children to read.* Washington, DC: Center for Applied Linguistics, 1969.

Baratz, J.C., & Stewart, W. *Ollie and friends* (Experimental readers). Washington, DC: Education Study Center, 1969.

*Laffey, J., & Shuy, R. (Eds.). *Language differences: Do they interfere?* Newark, DE: International Reading Association, 1973.

Leaverton, L., Gladny, M., & Davis, O. *The psycholinguistics reading series—a bidialectal approach.* Chicago: Board of Education, 1969.

Nolen, P. Reading nonstandard dialect materials: A study at grades two and four. *Child Development*, 1972, *43*(3), 1092–1097.

*Rystrom, R.C. Testing Negro-standard English dialect differences. *Reading Research Quarterly*, 1968–69, 4(4), 500–511.

*Seitz, V. *Social class and ethnic group differences in learning to read.* Newark, DE: International Reading Association, 1977.

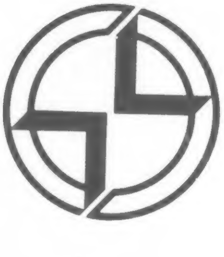
Shuy, R. W. *Discovering American dialects.* Champaign, IL: National Council of Teachers of English, 1967.

Shuy, R. The mismatch of child language and school language: Implications for beginning reading instruction. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading.* Hillsdale, NJ: Erlbaum, in press.

Simons, H. Black dialect, reading interference, and classroom interaction. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading.* Hillsdale, NJ: Erlbaum, in press.

Tatham, S. Reading comprehension of materials with select oral language patterns: A study of grades two and four. *Reading Research Quarterly*, 1969–70, 5(3), 402–426.

Reading Comprehension



Nature of Reading Comprehension and Its Instruction

Question I teach third-grade students. My school district recently conducted several inservice workshops on reading instruction. The emphasis of these workshops was on reading comprehension, and we were urged to devote more of our reading instructional time to comprehension. Unfortunately, the suggestions for how to go about doing this are not very helpful. Except for using the comprehension activities in the manual of our basal series, I don't really think I know how to teach comprehension. What procedures are suggested for improving reading comprehension?

Discussion Educators usually agree that the outcome of reading should be comprehension. But how readers comprehend written materials is still largely a mystery. This is not surprising because comprehension is a mental activity that cannot be observed and studied directly. All that we can do is measure the effects of various kinds of instruction on comprehension; from analyses of the relationships between instruction and reading materials, on the one hand, and test performance, on the other, we can make inferences about the nature of comprehension processes.

Recently, researchers have been devoting tremendous effort to the study of comprehension.* We hope that this research will yield a better understanding of the processes involved in comprehending and provide guidance for teaching and enhancing comprehension. At the present time a good deal of the research on comprehension is highly theoretical. It is difficult to draw instructional implications from this research. We expect that these research efforts will eventually yield valuable information that will enhance our knowledge about how to teach students to comprehend the materials they read.

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*The National Institute of Education established the Center for the Study of Reading at the University of Illinois, Urbana, in 1976. The work of the Center focuses on reading comprehension at the intermediate level.

However, some information is currently available on the nature of reading comprehension and its instruction that should be helpful in answering this third-grade teacher's question. While some of this information comes from research, a large portion comes from the opinions of reading experts. We report information from both sources in order to provide some guidance, admittedly brief, general, and speculative, for improving reading comprehension.

First, reading comprehension is not a unitary skill or ability. Instead, it appears to be the outcome of a number of component skills that are interrelated and interdependent. Consequently, identifying and providing instruction in these skills should improve performance on comprehension. What are these component skills?

Because comprehension depends a great deal on rapid, as well as accurate, word recognition, one possible way to improve reading comprehension is to be sure that word recognition skills are developed to the point where they are automatic—accurate, rapid, and done without conscious attention. (For a more detailed discussion of this topic see *Developing Reading Skill: The Relationship between Decod-*

ing and Comprehension and *The Nature of Reading and Its Instruction: The Role of Word Recognition in Reading*.)

Another important component of reading comprehension is vocabulary knowledge. Therefore, another possibility for improving comprehension is to expand students' vocabularies.

Recently there has been an increase in research on the effects of prior knowledge and point of view on comprehension. In order to understand the things we read, we must have the appropriate background knowledge. For example, if we are reading a story about a child who takes a vacation at a beach resort, it is extremely helpful for understanding the story to know what a beach is, what a resort is, what people do at these places, and so on. Having a variety of experiences and learning about things (through stories, TV, records, friends, etc.) that cannot be or have not been experienced directly should enable students to understand better what they read.

Some researchers have suggested that the ability to perceive and use the organizational structure of sentences, paragraphs, stories, and so on, is a factor that affects reading comprehension. They are now investigating this aspect of reading comprehension, the effect of text organization and structure on memory and comprehension.

Although the set of skills listed above—word recognition, vocabulary, prior knowledge, and text organization—is not complete, we think that it includes the major components of reading comprehension. Helping students to become proficient at these components, giving them a lot of practice by having them read enjoyable materials, and directing their thinking by asking them questions about reading materials (see *Reading Comprehension: Question-Asking Strategies*) should result in good reading comprehension for most students. As a final note, although we list these skills serially, they should not be taught sequentially. Instead, we think they should be taught concurrently as part of a systematic program in reading.

Summary

Although there is a good deal of research now being conducted to determine the nature of comprehension processes, most of it is theoretical and not yet highly useful for instructional application. We can, however, draw on existing research results and expert opinion to make some suggestions for improving reading comprehension.

Comprehension is generally thought to be the outcome of a number of component skills. Therefore, improvement in these skills should have a favorable effect on comprehension. They include automatic word recognition, vocabulary knowledge, prior "world" knowledge, and organizational skills. We recommend that teachers spend time teaching these components (concurrently, not sequentially) in an effort to enhance reading comprehension.

We think that teaching these component skills using good questioning strategies and teaching students to develop their own questioning ability will result in improved comprehension for most elementary grade students.

Suggested Reading

*Carroll, J. The nature of the reading process. In H. Singer & R. Ruddell (Eds.), *Theoretical models and processes of reading*. Newark, DE: International Reading Association, 1976.

Cromer, W. The difference model: A new explanation for some reading difficulties. *Journal of Educational Psychology*, 1970, *61*(6), 471–483.

Davis, F.B. Research in comprehension in reading. *Reading Research Quarterly*, 1967–68, *3*, 499–545.

Gibson, E., & Levin, H. *The psychology of reading.* Cambridge: MIT Press, 1975.

*Pavlak, S. *Excerpts from significant research on comprehension (1948–1972).* Paper presented at the meeting of the International Reading Association, New Orleans, May 1974. (ERIC Document Reproduction Service No. ED 095 506).

Rosenshine, B. Skill hierarchies in reading comprehension. In R. Spiro & W. Brewer (Eds.), *Theoretical issues in reading comprehension.* Hillsdale, NJ: Erlbaum, in press.

Thorndyke, P. Cognitive structures in comprehension and memory of narrative discourse. *Cognitive Psychology*, 1977, *9*(1), 77–110.

Wheat, T., & Edmond, R.M. *An analysis of the concept of comprehension.* Paper presented at the meeting of the International Reading Association, New Orleans, May 1974. (ERIC Document Reproduction Service No. ED 092 915)

Question-Asking Strategies

Question I am a curriculum specialist for the elementary grade teachers in my school district. Our major goal in reading instruction for the next school year is to improve students' abilities to comprehend what they read. What recommendations should I make to teachers for developing questioning strategies as a means of helping students comprehend reading selections? What kinds of questions should be asked? When and how should they be presented?

Discussion Questioning students about what they have read is one of the most commonly used techniques for teaching or improving comprehension. Asking questions serves two important purposes: (a) it is a check to see if students understand what they read; and (b) it is an attempt to influence the way students think about materials they have read or will read. The second purpose is more relevant to the questions asked by this curriculum specialist. Research on how classroom questioning techniques affect comprehension and thinking is limited. However, descriptive literature on teaching comprehension is abundant. We use both to help guide our responses to the questions posed.

Let's assume that the kinds of questions teachers ask do influence students' reading of subsequent selections, such that students think about the materials only to the degree that will help them answer the kinds of questions their teachers ask. And, let's as-

sume further that some teachers ask only factual or literal questions that can be answered by merely locating the information in the passage and that other teachers ask higher level questions—inferential, interpretive, and evaluative—as well as literal questions. Which questioning technique would you favor and therefore recommend?

We certainly would not recommend the practice of asking only literal questions. This practice could mislead students into thinking that the only purpose of reading (at least in school) is to be able to answer factual questions. This, in turn, might lead them to focus only on the details of selections; they might miss the major points and never really think much about what they read.

Will asking students higher level questions promote more and deeper understanding of materials? If students are asked, for example, to answer inferential questions about events in stories, they will have the opportunity to demonstrate that they can understand underlying meanings. Such higher level questions stimulate students to think about the reading selections. We hope that by varying the kinds of questions asked, students will read to understand the materials and will think about them at the different levels required by the questions.

An assumption that teachers seem to make regarding the use of questioning as a technique for improved reading comprehension is that students will adopt a self-questioning strategy based on the teacher's questioning. Students don't always have a teacher with them to ask questions and promote comprehension. The implicit goal of the questioning technique is that students will learn to monitor their own comprehension and thinking processes by asking themselves questions as they read, to help them understand, and after they read, to help them remember. Until we know more about how students comprehend and about how to assist them in developing strategies for comprehending, we have to assume that they have a better chance of developing self-questioning skills if teachers provide a method for question-asking than if there is no questioning at all. Therefore, despite the many assumptions on which this discussion has been based, we suggest that teachers use questioning and that the kinds of questions asked be varied to include those that require responses at many levels—literal, inferential, interpretive, evaluative, and so on.

The curriculum specialist also wonders when and how questions should be presented. There is a collection of studies that explores the effects of question placement (before or after a given selection) and, more specifically, there is some research that examines the effects of actually inserting questions in the text (in the margins, between paragraphs, or in some other way set off from the text). The results of these studies suggest that when questions are asked before the material related to those questions is read (prequestions), students tend to learn only the information that pertains to the questions. On the other hand, when questions follow reading of the relevant material (postquestions), students seem to learn and remember more about the material. This may be because the students don't know what they will be asked and, therefore, try to learn and remember as much about the material as they can. With the prequestions they may just look for the information that will enable them to answer the question and ignore the rest of the passage.

There are several problems with the research on pre- and postquestions. First, we don't know if students who are exposed to text-inserted questions will adopt this strategy with materials that do not contain questions. In other words, it would be ideal if students developed and used a self-questioning strategy during reading, but we don't know yet whether this is the case. The most serious problem is that most of the experiments were done with college students and adults, and only a few were done with elementary school students. The findings of the studies using younger students are mixed, so we cannot be sure what the effects would be on students at the elementary level.

Summary

We recommend that teachers ask all kinds of questions of students at all grade levels. The kinds of questions asked—literal, inferential, interpretive, evaluative, etc.—should vary with the particular purpose or goal of comprehension. We think that varying the kinds of questions will encourage students to think more about what they read. We do not have strong evidence that modeling question-asking will aid students' comprehension when there is no teacher to ask the questions, but we think it will help.

Prequestions seem to increase the likelihood of students' learning the specific information which will correctly answer the questions. Postquestions are preferable if the students are to learn more generally the content of what they have read. Because the body of research on how this questioning technique works with younger students is still quite limited, we must be cautious in our recommendations. However, from our present information, it appears that, for children as well as adults, postquestioning facilitates learning to a greater degree than prequestioning.

Suggested Reading

Carin, A., & Sund, R. *Developing questioning techniques.* Columbus, OH: Charles E. Merrill, 1971.

*Faw, H.W., & Waller, G.T. Mathemagenic behaviors and efficiency in learning from prose materials: Review, critique, and recommendations. *Review of Educational Research*, 1976, *46*(4), 691–720.

Frase, L.T. Effect of question location, pacing and mode upon retention of prose material. *Journal of Educational Psychology*, 1968, *59*(4), 244–249.

Gibson, E., & Levin, H. *The psychology of reading.* Cambridge: MIT Press, 1975.

*Guzak, F. Teacher questioning and reading. *The Reading Teacher*, 1967, *21*(3), 227–234.

Rothkopf, E.Z. The concept of mathemagenic activities. *Review of Educational Research*, 1970, *40*(3), 325–336.

Rothkopf, E.Z., & Bisbicos, E. Selective facilitative effects of interspersed questions on learning from written material. *Journal of Educational Psychology*, 1967, *58*(1), 56–61.

Rothkopf, E.Z., & Coke, E.U. Repetition interval and rehearsal method in learning equivalences from written sentences. *Journal of Verbal Learning and Verbal Behavior*, 1963, 2, 406–416.

Sanders, N. *Classroom questions: What kinds?* New York: Harper & Row, 1966.

Singer, H. Active comprehension: From answering to asking questions. *The Reading Teacher*, 1978, *31*(8), 901–908.

*Swenson, I., & Kulhavey, R. Adjunct questions and comprehension of prose by children. *Journal of Educational Psychology*, 1974, *66*(2), 212–215.

*Wiesendanger, K.D., & Wollenberg, J.P. Prequestioning inhibits third graders' reading comprehension. *The Reading Teacher*, 1978, *31*(8), 892–895.

Cloze Tasks and Improving Reading Comprehension

Question Last summer I worked with a team of intermediate level teachers in a six-week reading workshop. The reading consultant who directed the workshop suggested that we use cloze tests to assess our students' knowledge of the vocabulary and content of their social studies textbooks. I tried this technique and found that it was quite helpful. I thought it might be a good teaching technique if I were to develop and use sets of cloze worksheets to help my students with reading comprehension. Would the use of cloze tasks be advisable as a teaching device?

Discussion Although the cloze procedure is known by many teachers, some teachers may not be familiar with it. Below is a brief discussion of what the procedure is and how it has been used.

The cloze procedure can be thought of as a special kind of "fill-in-the-blanks" task. Typically, single words are deleted from a passage and replaced with blank spaces. (The spaces are generally all the same length to prevent using length as a clue to what the missing words are.) The words are usually deleted according to some system (e.g., every fifth word, every third noun), and this varies according to the purpose of the task. (Uses of the task are mentioned below.) The most common formula is to delete every fifth word, leaving the first and last sentences intact. In most cases, students are given the passage "cold"; that is, they've never seen it without the deletions. The object is to fill in the missing words on the basis of the context of the passage. The following is an example of a cloze passage:

There were a fox and a bear who were friends. One day they decided _____ catch a chicken for _____ because neither one wanted _____ be left alone. They _____ until it was night _____. Then they ran quickly _____ a nearby farm where _____ knew chickens lived. The bear, who felt very lazy, climbed upon the roof to watch.

Since the 1950s, the cloze procedure has been used to measure readability of text, that is, to determine the relative difficulty by grade level of a text. More recently the cloze technique has gained some popularity as a measure of reading comprehension. And most recently, probably due to its popularity as a testing device, the cloze technique is being used by many teachers as a reading comprehension teaching device.

The research on using cloze exercises as a way to improve reading comprehension has generally shown them to be unsuccessful when comprehension is measured on the passage-question type tests. However, it is important to mention that in most cases the students merely completed the cloze passages; the students were given no instruction on how to do them and no feedback on which answers were right or wrong. Therefore, students were doing cloze exercises without being taught how to do them. For this reason, we think it is more accurate to say that merely practicing cloze exercises probably will not result in improved comprehension as measured by the passage-question type of achievement tests.

Very little research has been done on the effects of actually trying to teach students how to complete cloze exercises. It is difficult to draw conclusions from the results of what research there is, because the results are mixed depending on the system of deletion used and the type of instruction given. Furthermore, the type of instruction given and the measure of comprehension used are often unclear and sometimes even unspecified. Finally, most studies were conducted with high school or college level students; we do not know what the results would be for younger students. Because of the insufficient amount and inconclusive nature of existing research, drawing conclusions from it must be highly tentative at best. Without much help from research, what can we say about the cloze technique for instructional purposes?

For the most part, research results indicate that practicing cloze exercises does not improve comprehension. However, some research evidence and professional opinion suggest that direct teaching with cloze passages leads to improvement in certain areas. For example, instruction on how to complete a cloze passage does result in improved performance on cloze passages. What students may learn from such instruction is an increased awareness of contextual cues and grammatical patterns. Cloze patterns can be adapted to accommodate particular remediation needs; deletion patterns can be devised to concentrate on any of a number of areas of concern—for example, plurals, verb agreement, and homonyms.

Although we cannot draw firm conclusions from research, it seems fair to say that mere practice with cloze passages is not effective. Direct instruction on completing cloze passages for specific purposes may be beneficial. Therefore, we tentatively suggest use of the cloze technique as one part of a program of teaching reading comprehension.

Summary

The cloze procedure has been used to measure readability of text, to assess reading comprehension, and, recently, to improve reading comprehension. At this time, it appears that the benefits of using cloze exercises as a technique for improving reading comprehension are limited. We draw this conclusion for several reasons: (a) The research generally suggests that the cloze technique does not improve the kind of comprehension measured by typical reading achievement tests. (b) Most of the research conducted on the cloze technique has been with college-aged and adult readers. These results cannot be extended to younger readers. (c) Most of the research involves only investigation of situations where students are given practice—without direct instruction—in completion of cloze passages.

Only limited evidence exists that instructional use of cloze exercises results in reading improvement in specific skill areas. If teachers do use the cloze format, however, we urge them to devise passages that are appropriate to the needs of individual students and to give their students direct instruction in how to complete the passages.

Finally, the cloze technique should not be used as the only means of enhancing reading comprehension. Common sense dictates that a variety of instructional strategies would better insure improved comprehension.

Suggested Reading

*Beil, D. The emperor's new cloze. *Journal of Reading*, 1977, *20*(7), 601–604.

Bickley, A.C., Ellington, B.J., & Bickley, R.T. The cloze procedure: A conspectus. *Journal of Reading Behavior*, 1970, *2*(3), 232–249.

Bloomer, R., Louthan, V., Heitzman, A., & Mitchell, R. *Non-overt reinforced cloze procedure*. Washington, DC: U.S. Office of Education, 1966. (ERIC Document Reproduction Service No. ED 010 270)

Bormuth, J.R. The cloze readability procedure. *Elementary English*, 1968, *45*, 429–436.

Dahl, P. *An experimental program for teaching high speed word recognition and comprehension skills* (NIE Final Rep. No. 3-1154). Washington, DC: U. S. Government Printing Office, 1974.

Guice, B.M. The use of the cloze procedure for improving reading comprehension of college students. *Journal of Reading Behavior*, 1969, *1*(3), 81–92.

*Jongsma, E. *The cloze procedure as a teaching technique*. Newark, DE: International Reading Association, 1971.

*Kennedy, D.K., & Weener, P. Visual and auditory training with the cloze procedure to improve reading and listening comprehension. *Reading Research Quarterly*, 1972–73, *8*(4), 524–541.

Lopardo, G. LEA cloze reading material for the disabled reader. *The Reading Teacher*, 1975, *29*(1), 42–44.

MacGinitie, W.H. Contextual constraints in English prose paragraphs. *Journal of Psychology*, 1961, *51*, 121–130.

Neville, M., & Pugh, A. Context in reading and listening: Variations in approach to cloze tasks. *Reading Research Quarterly*, 1976–77, *12*(1), 13–31.

Robinson, R. *An introduction to the cloze procedure.* Newark, DE: International Reading Association, 1972.

Samuels, S.J., Dahl, P., & Archwamety, J. Effect of hypothesis/test training on reading skill. *Journal of Educational Psychology,* 1974, *66*(6), 835–844.

Schneyer, I.W. Use of cloze procedure for improving reading comprehension. *The Reading Teacher,* 1965, *19*(3), 174–179.

Improving Reading Comprehension Test Scores

Question I am a reading specialist in a large urban school district. We have really concentrated on improving our students' achievement in reading during the past several years. In general, our primary level students' reading achievement test scores have increased steadily. Our fourth through sixth grade students' reading achievement test scores have improved in the areas of word recognition and vocabulary, but there has been very little improvement in their reading comprehension test scores. Our reading coordinator has suggested that we add to our already crowded curriculum a program to teach "test taking" skills. Will teaching our students these skills improve their reading comprehension?

Discussion The goal of instruction in reading comprehension is to improve students' comprehension in many ways, not just in the way that is reflected by improved scores on the reading comprehension sections of achievement test batteries. There is no quick or easy teaching technique that we can recommend for improving reading comprehension. As we have said in other sections on comprehension, we think comprehension difficulties may originate from a variety of sources—inadequate or nonautomatic word recognition skills, poor vocabulary, or limited general knowledge (for discussion on this topic see *Reading Comprehension: Nature of Reading Comprehension and Its Instruction*). Improvement in these areas should be reflected in higher scores on comprehension tests. But we have also suggested that test scores do not always fully reflect students' comprehension ability; that is, some students may not perform well on tests for reasons other than lack of comprehension skill. Evidence suggests that some students are less skilled at taking tests and that test scores can be improved somewhat by teaching these students test taking skills, in other words, by making them "test-wise."

It appears that some students, apart from or in addition to having the knowledge that is measured on tests, generally know things about taking tests that other students do not know. Most generally, test-wiseness seems to involve being familiar with and not highly anxious about taking tests. Research findings suggest that there are several ways in which teachers can increase familiarity with test taking and reduce test anxiety. First, provide experience with test-like formats. Give students practice exercises using the exact format (e.g., layout, type of response required) of tests that they will be taking. This is especially important if a separate machine-scorable answer sheet is used, because students, especially younger students, often find the format confusing and may mismark items. If you teach younger students, and if you have a choice, choose the option where answers are marked right in the test booklet rather than on a separate answer sheet. In addition, when using practice exercises, give directions in the language used in the test manuals.

Second, often students do not finish tests—they might not realize the importance of speed on most achievement tests or they don't know how to pace themselves. We suggest giving some timed exercises using classroom instructional materials. Tell the students to work rapidly through the items; they should not dwell on questions that they can't answer quickly but should note them and come back to them after completing the easier items. Practice in class on timed exercises using test-like formats should lessen anxiety when the students take actual tests.

Making students test-wise will not make them better comprehenders. However, it should help the students perform at their best on tests, so that their test scores provide accurate information regarding their level of achievement.

Summary

Scores on reading comprehension achievement tests reflect students' abilities to take tests as well as their comprehension skills. There is some evidence that test scores can be improved somewhat by preparing students for testing situations. Exercises that reproduce the format, instructions, and time constraints of standardized achievement tests should reduce anxiety and make students more test-wise. When students perform at their best on tests, teachers have more accurate information about comprehension skill levels and a better basis on which to plan instruction.

Suggested Reading

Bath, J. Answer changing behavior of objective examinations. *Journal of Educational Research*, 1976, *61*(3), 105–107.

Carroll, J. Defining language comprehension: Some speculations. In R. Freedle & J. Carroll (Eds.), *Language comprehension and the acquisition of knowledge*. New York: Wiley, 1972.

*Crehan, K., Koehler, R., & Slakter, M. Longitudinal studies of test-wiseness. *Journal of Educational Measurement*, 1974, *11*(2), 209–212.

*Erickson, M. Test sophistication: An important consideration. *Journal of Reading*, 1972, *16*(2), 140–144.

Farr, R. *Reading: What can be measured?* Newark, DE: International Reading Association, 1969.

Millman, J., Bishop, H., & Ebel, R. An analysis of test-wiseness. *Educational and Psychological Measurement*, 1965, *25*(3), 707–726.

Neville, D., Pfost, P., & Dobbs, V. The relationship between test anxiety and silent reading gain. *American Educational Research Journal*, 1967, *4*(1), 45–50.

Pyrczak, F. Objective evaluation of the quality of multiple-choice test items designed to measure comprehension of reading passages. *Reading Research Quarterly*, 1972–73, *8*(1), 62–71.

Tuinman, J. Determining the passage dependency of comprehension questions in 5 major tests. *Reading Research Quarterly*, 1973–74, *9*(2), 206–223.

Wahlstrom, M., & Boersma, F. The influence of test-wiseness upon achievement. *Educational and Psychological Measurement*, 1968, *28*(2), 413–420.

Difficulties in Developing Reading Skill

Reading and Learning Disabilities

Question As the reading coordinator for the elementary grades, I have been asked to supervise the efforts of two special programs in a school. One was established to teach remedial reading; the other was recently started to serve students who are identified as being learning disabled. There appears to be some conflict between the role of the reading specialist and that of the learning disabilities specialist. Frankly, I am not clear about the distinction between the two specialties. Can you help resolve our conflict by explaining the roles of each specialist?

Discussion We aren't surprised that this reading coordinator is confused over the roles of reading and learning disabilities specialists. A review of the professional literature suggests that there is considerable controversy over the defined roles of each specialist, the type of child to be referred to each, and the nature of the treatment that each recommends for remediating problems. What makes matters even more confusing is that theoretical and philosophical differences between the two specialties frequently are quite different from what is actually practiced in the schools. Although their emphases vary, both reading and learning disabilities specialists often work with the same types of students—those who are not learning to read as well as they are expected to—and work with them in much the same way.

Although we cannot resolve the conflicts of the field in this discussion, we will nevertheless try to clarify some of the issues. Research is beginning to provide some helpful information on the nature of the reading process and insights into the origins and treatments of reading problems. Such information eventually should clarify more fully the differences between reading and learning disabilities.

Traditionally, classroom teachers enlist the help of reading specialists for students who are behind in reading. Teachers refer these students for intensive remedial instruction by a specialist trained in reading. Remediation focuses on skills that are found to be deficient, not on what might have caused the deficiencies. Although the pace of the lessons might be different, the methods and materials used by the remedial teacher are, for the most part, quite similar to those used by the teacher in the classroom.

The field of learning disabilities developed more recently than that of remedial reading. It evolved from the notion that a few of the children with reading problems (about 2%) have difficulty because of a central nervous system dysfunction. Generally, learning disabilities specialists believe that this group should be isolated and treated differently from the larger group, whose reading difficulties are not neurophysiologically based.

What are the differences in treatment between those students with a reading disability and those with a learning disability? As we mentioned, the reading specialist emphasizes reading skills. Skill deficits are identified and remediated using methods and materials similar to those used in classroom instruction. In contrast, the learning disabilities specialist emphasizes the perceptual, cognitive, and linguistic processes assumed to underlie reading skills. Deficits in these processes are identified, and instruction is designed to remediate the process deficits. Consequently, instruction by learning disabilities specialists focuses on auditory and problem. Therefore, her efforts are focused on improving John's auditory processing.

The reasoning behind this type of remediation is that improvement in the underlying processes will also improve reading, or at least make students more likely to benefit from concurrent or subsequent reading instruction.

Let's consider an example. Suppose Harold is reading 2.6 years below his grade level and is being seen by Mr. Mason, the school's reading specialist. According to the evaluation, Harold's reading problem is due to his inability to decode accurately and rapidly. Therefore, Mr. Mason decided to use a highly structured, tightly sequenced program of phonics instruction aimed at improving Harold's word recognition skills.

John, on the other hand, is reading 2.1 years below the expected level and has been referred to Ms. Quincy, a learning disabilities specialist. She has assessed John's problem as one of decoding, but she suspects that an auditory deficit underlies the problem. Therefore, her efforts are focused on improving John's auditory processing.

We must emphasize that this example was created to make theoretical differences explicit, but it probably does not reflect actual instructional programs. In practice, as we mentioned earlier, the distinctions between the reading and learning disabilities specialists are much less clear. In recent years there has been a greater sharing of resources and referrals by these specialists.

Some experts in both specialties have suggested that it is not necessarily advantageous to classify students with reading problems according to an assumed cause. Such a narrow scheme may even stand in the way of remediation. Furthermore, there is a growing body of research that suggests that treatment based on underlying processing deficits may not be as effective as direct instruction in the skills themselves (see *Reading Readiness: Visual Perceptual Skills*). This has resulted in some learning disabilities specialists leaning more toward the reading specialists' philosophy, focusing more on reading skills development. On the other hand, reading specialists have learned a great deal from the field of learning disabilities. Greater understanding of the processes necessary for reading growth adds insight and depth to remedial programs.

Summary

We have tried to clarify the distinction between reading and learning disabilities specialists. Traditionally, each profession viewed the source of the reading problem differently. The reading specialist viewed reading problems as the result of skills deficits; the learning disabilities specialist viewed the problems as the result of a central nervous system dysfunction. Hence, the focus of the reading specialist is on actual reading skills, whereas that of the learning disabilities specialist is on the cognitive, perceptual, or linguistic processes thought to underlie the skills. These differences are beginning to shrink both in theory and in practice. Recent research suggests that direct skills teaching may be more effective than trying to train underlying processes, and these research findings seem to be affecting current educational practice.

Suggested Reading

Allington, R. Sticks and stones . . . but, will names never hurt them? *The Reading Teacher*, 1975, *28*(4), 364–369.

*Artley, A., & Hardin, V. A current dilemma: Reading disability or learning disability. *The Reading Teacher*, 1976, *29*(4), 361–366.

Bateman, B. Teaching reading to learning disabled and other hard to teach children. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum, in press.

Chall, J. Recent research in reading and learning disabilities. *Journal of learning disabilities*, in press.

Hammill, D., Goodman, L., & Wiederholdt, L. Visual motor processes: Can we train them? *The Reading Teacher*, 1974, *27*(5), 469–478.

Kaluger, G., & Kolson, C. *Reading and learning disabilities*. Columbus, OH: Merrill, 1969.

*Lerner, J. Remedial reading and learning disabilities: Are they the same or different? *Journal of Special Education*, 1975, *9*(2), 119–131.

Niensted, S. Talking with learning disability teachers. *The Reading Teacher*, 1975, *28*(7), 662–665.

Distinguishing Reading Problems from Linguistic Differences among Speakers of Standard Black English

Question I work in a low income neighborhood in an inner-city school district, and most of the students I teach are black. Many of the students in our district are identified as having reading or learning disabilities. The teachers in my school are concerned because a number of students who are identified as "disabled" appear to be diagnosed inaccurately. We need more help in diagnosing reading disabilities. What recommendations might we follow?

Discussion As we discussed in another section of this report (*Developing Reading Skill: Standard Black English and Reading Interference*), a disproportionately large number of black children from low income families experience failure in reading. Many of these children, as the teacher here suggests, are then labeled reading or learning disabled. It seems reasonable to ask whether all these children are in fact disabled readers or learners. Are they all in need of remedial instruction from a specialist?

The answer is not a simple one. Any resolution of these questions depends on the clarification of another educational issue—that involving standard Black English speech and learning to read.

The issue of linguistic difference and its role in learning to read has been discussed in *Developing Reading Skill: Standard Black English and Reading Interference*. Read this section for the background information it contains. In it we explain that standard Black English is different from standard English in several ways. We discuss differences in vocabulary, grammar, and pronunciation. Our recommendations are tentative: Although research has not provided definitive answers, these speech differences per se do not seem to interfere with learning to read, but some modifications in teaching strategies and teachers' attitudes would nevertheless be beneficial for the education of standard Black English speakers.

Although researchers have examined the problems of teaching standard Black English speaking children, relatively little direct attention has been devoted to diagnosing and assessing the reading problems of these children. Consequently, we need to consider the following question: If special linguistic differences are not taken into account in the development or administration of diagnostic tests, won't a disproportionate number of standard Black English speakers do poorly on these tests?

Children are currently assessed on tests that may penalize the child with speech differences. For example, let's examine a test of auditory discrimination. To determine the ability to discriminate minor phonological differences, this test requires the student to listen to two phonologically similar words, such as *pass* and *past*. The student is then asked whether they are the same or different. A standard Black English speaker is likely to respond "same." This response would be counted as an error. What is critical to note in this example and others like it is the fact that in standard Black English *past* and *pass* are pronounced the same. The test scores of these children may be a reflection of standard Black English, not a problem in auditory discrimination. Unfortunately, the test is not sensitive to this important difference.

Oral reading tests are subject to the same kind of misinterpretation. Speakers of standard Black English often recode standard English into their own speech patterns as they read. Thus, the sentence *Here is a cup* might be read "Here go a cup." Likewise, *Joe runs to his brother* might be read "Joe run to his brother." These are examples of recoding into standard Black English. Unless teachers and examiners are aware of this issue and are familiar with these common recodings, they are likely to be interpreted as errors.

However, comprehension, not pronunciation according to standard English, should be the key factor in establishing reading skill. Some research has shown that children who give standard Black English renditions of standard English text nevertheless comprehend what they read; the fact that they recode in standard Black English differently does not necessarily indicate a problem in understanding. Unfortunately, some tests of oral reading do not consider comprehension as part of the total score, and most do not take linguistic variation into account when evaluating results.

It is not difficult to understand why children who speak a dialect other than standard English may do poorly on many diagnostic tests, such as those of oral reading, auditory blending and discrimination, and spelling. Teachers or test administrators who are unaware of the effect of dialect difference on reading performance are unlikely to modify their evaluation of test results. Consequently, a large number of black children are being inappropriately diagnosed as reading or learning disabled.

What can be done to resolve this problem? We have four interrelated suggestions. Perhaps the most workable solution would be for educators to become sensitive to recoding renditions of standard English into standard Black English. For assessment purposes, differences in responses that are attributed to dialect speech should not be considered errors. Furthermore, emphasis should be placed on assessing comprehension of oral passages. Greater care needs to be taken in evaluating and interpreting the results of tests, and responses on individual items should be checked to determine whether they are recoded responses, not errors in meaning.

We must caution that of course there are some black children, as there are in any group of children, who fail at reading. We certainly do not want to misdiagnose those children either. In an effort to be fair to speakers of standard Black English, it is critically important not to overlook errors that reflect genuine reading difficulties, that is, responses that result in a change in the meaning of a passage. We do not want to fall into the trap of mislabeling standard Black English speakers as disabled readers, but we certainly do want to make remedial help available to all children in need of special assistance. For this reason, we stress the importance of especially careful evaluation of diagnostic test results of children who speak standard Black English. This evaluation should use meaning as a criterion of whether a change in pronunciation from the expected word is a reading error or simply a recoding into standard Black English pronunciation.

Summary

Large numbers of standard Black English speaking students are diagnosed as reading or learning disabled and recommended for remedial instruction. Some of these students may be misdiagnosed because speech patterns and pronunciations are counted as errors on various kinds of diagnostic tests. We recommend that teachers learn to distinguish linguistic differences from errors that interfere with comprehension. At the same time, it is important to identify those speakers of standard Black English who actually have reading difficulties. Careful analysis and interpretation of test results is recommended.

Suggested Reading

Baratz, J.C. Relationship of black English to reading: A review of research. In J.L. Laffey & R. Shuy (Eds.), *Language differences: Do they interfere?* Newark, DE: International Reading Association, 1973.

*Bartel, N., Grill, J., & Bryen, D. Language characteristics of black children: Implications for assessment. *Journal of School Psychology*, 1973, *11*(4), 351–365.

Breland, H.M., Stocking, M., Pinchak, B.M., & Abrams, N. *The cross-culture stability of mental test items.* Project report 74-2. Princeton, NJ: Educational Testing Service, 1974.

Cunningham, P.M. Teachers' corrective responses to black-dialect miscues which are non-meaning changing. *Reading Research Quarterly*, 1976–77, *12*(4), 637–653.

Goodman, K.S. (Ed.). *Miscue Analysis: Applications to reading instruction.* Urbana, IL.: ERIC Clearinghouse on Reading and Communication Skills and National Council of Teachers of English, 1976.

Hall, V.C., & Turner, R.R. The validity of the "different language explanation" for poor scholastic performance by black students. *Journal of Educational Research*, 1974, 44(1), 69–81.

Harber, J.R., & Bryen, D.N. Black English and the task of reading. *Review of Educational Research*, 1976, *46*(3), 387–405.

Hunt, B.C. Black dialect and third and fourth graders' performance on the Gray oral reading test. *Reading Research Quarterly*, 1974–75, *10*(1), 103–123.

*Hutchinson, J.O. Reading tests and nonstandard language. *The Reading Teacher*, 1972, *25*(5), 430–437.

Loban, W.W. Teaching children who speak social class dialects. *Elementary English*, 1968, *45*, 592–599.

Lucas, M.S., & Singer, H. Dialect in relation to oral reading achievement: Recoding, encoding, or merely a code? In H. Singer and R.B. Ruddell (Eds.), *Theoretical models and processes of reading*. Second edition. Newark, DE: International Reading Association, 1976.

Samuels, S.J., & Dahl, P.R. Ghetto children can learn to read. *The Reading Teacher*, 1973, *27*(1), 22–24.

*Smith, N.B. Cultural dialects: Current problems and solutions. *The Reading Teacher*, 1975, *29*(2), 137–141.

Listening while Reading as a Technique for Developing Fluency

Question I am a reading specialist working with fifty students in grades four through eight. Their reading achievement is at least one full year below grade level, as measured by reading achievement tests, and most are two or three years below grade level. Although the range of reading skill within this group varies, most of the students have difficulty recognizing words in a systematic way. Despite the fact that I spend considerable time teaching these skills, I feel that I am not doing enough. I have heard that having a child read the text while listening to a tape recording of it improves reading skill. Is there any evidence to support this technique?

I have another question. I recently attended a meeting where something called the "neurological impress" method was presented. The guest speaker described the method (the teacher sits behind the student, reading aloud as the student reads) but was not very specific about how to use it or with what kinds of students it would be helpful. In many ways this method seems similar to using tape recordings. Is it, in fact, much the same? Has the neurological impress method been effective in helping students become more fluent readers?

Discussion Although tape recorded texts are in use in both classroom and remedial reading situations, research on the effectiveness of their use is sparse and limited in scope. The findings of this small body of research are also contradictory. Therefore, we want to stress that we can draw no definitive conclusions regarding the usefulness of tape recorded texts. We can only present results of some of the research and some explanations for either the success or failure of instruction based on this method.

Some researchers who use tape recorded stories have reported positive results, but their explanations for these results differ. Some maintain that the advantage of taped stories lies in the simultaneous presentation of auditory and visual information. Others believe that the success of instruction using tape recorded stories lies in the repetitive element in their use. Research has shown that, although the kinds of errors do not change with repeated readings, the number of errors decreases as students gain familiarity with the text. In other words, the second time Ann reads a passage she will probably still make the same types of errors she made the first time around (e.g., omitting words or substituting one for another), but this time she will make fewer of them. This change suggests that instructional programs which include taped stories can be used to take advantage of the benefits of repeated exposure to the same passages. Students can play and replay a taped story, as well as record their own readings of a story, until they have mastered it.

Another explanation for the success of taped stories also stresses the importance of repetition. In this case, repetition is believed to foster greater familiarity with the patterns and flow of the language used in the passage. Generally, skilled readers can predict with a fair degree of accuracy what is coming next in a passage. This familiarity with language makes the job of reading a lot easier because readers then know what to expect. From multiple exposures to fluently read stories, readers become familiar with things like phrasing, verb endings, tense variation, and so on. Most of us have developed this competence naturally and easily through exposure to oral language. Consequently, some reading specialists advocate that repeated listenings to tape recorded stories be used to provide children with more of this important exposure to oral language.

Not all research on taped stories reports positive results. After using this method, some researchers have found no significant improvement in reading. They suggest that the combination of the auditory and visual modalities is not beneficial; instead, it leads to an "information overload." Others explain that repeated exposures to a story may result in a decrease in attention and that multiple presentations of the same material will lead to a change in learning behaviors. A third speculative explanation for the failure of this method is lack of personal contact. Teacher attention has been shown to be a positive influence on learning. In this case, the absence of the "personal touch," particularly lack of correction, may explain the failure.

Because there is support both for and against using tape recorded stories, it is difficult to answer this specialist's question. In the absence of any firm conclusions from research, we can only make tentative recommendations. We suggest that the techniques of reading along with tape recordings and repeated exposure to a passage be used to supplement direct reading instruction. Such techniques seem to be a good source of practice and a way to develop automatic word recognition and reading fluency for students who are not adept at word recognition. Furthermore, students who know "all the rules" of decoding but are not adept at applying them also would probably benefit from these instructional techniques.

The reading specialist also asked about the neurological impress method. It is similar to using taped stories for reading instruction, because it also provides a model of fluent reading while the child follows along. However, the neurological impress method is based on the theory that nonfluent reading is due to some deficit or improper development of the "neurological structure" needed for reading. Advocates of the treatment contend that it causes neurological changes in the brain and thereby corrects reading failure. Following is a brief description of the neurological impress method for those readers who are unfamiliar with it.

The teacher, sitting slightly behind the child, reads the selection into the child's ear. At the same time, the teacher's finger acts as a locator and marks each word in the text as it is being read. The child is to read along with the teacher as quickly and unerringly as possible. This goes on for a 15-minute period. At the end of that time no comprehension questions are asked, although the child is free to discuss the readings. As the reading sessions progress, the teacher's voice decreases in speed and volume to allow the child to take over the lead. The child also does the finger locating at this point. If an error occurs or the child shows signs of having difficulties, the teacher immediately, by increasing voice speed and volume, corrects or guides the child.

Only a limited number of studies have investigated the neurological impress method. Unfortunately, what little research has been done tends to suffer from methodological flaws. However, when the gains of poor readers are analyzed, results of many of the studies have been positive. We can only speculate why a program like this might be effective. Certainly a generous amount of teacher attention and individualized instruction is built into the method, as well as ample opportunity for praise and positive reinforcement. The immediate feedback and "on-the-spot" correction of errors, an integral part of the neurological impress method, are known to be positive features in any learning situation. As mentioned above in our discussion of taped stories, fluent oral reading by someone other than the child can be an effective instructional technique.

However, we must caution that, in evaluating the research on this method, we have found no evidence to support the claim that actual neurological changes take place because of the tutoring sessions. While the research suggests that the neurological impress method is effective, we propose that its success might be due to other factors, mentioned above, rather than to neurological change.

Summary

Research evidence on the use of repeated fluent readings as a model for students, either in the form of tape recorded stories or neurological impress, is inconclusive. Some studies report positive results. Several explanations for the success of the method are offered: pairing auditory and visual information, repetition, and exposure to the rhythms and patterns of language. We note that the neurological impress method has the added positive feature of individual attention from the teacher.

However, some researchers do not report success with this method. They claim this is due to the fact that this type of simultaneous presentation of auditory and visual stimulation is confusing. Practically speaking, the neurological impress method has some serious drawbacks—it is demanding and time-consuming. Furthermore, no evidence exists that use of the impress method actually leads to neurological changes in the brain.

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Suggested Reading

*Chomsky, C. After decoding, what? *Language Arts*, 1976, *53*(3), 288–296.

Gardner, C. *The experimental use of the impress method on reading habilitation* (U.S. Office of Education Cooperative Reading Project No. 8167). Washington, DC: U.S. Government Printing Office, 1965.

Gilbert, L.C. Effect on silent reading of attempting to follow oral reading. *Elementary School Journal*, 1940, *40*(8), 614–621.

Gonzales, P., & Elijah, D. Rereading: Effect on error patterns and performance levels on the IRI. *The Reading Teacher*, 1975, *28*(7), 647–652.

Heckelman, R. Using the neurological impress remedial reading technique. *Academic Therapy*, 1966, *1*(4), 235–239.

Heckelman, R. A neurological impress method of remedial reading instruction. *Academic Therapy*, 1969, *4*, 277–282.

Hollingsworth, P. An experiment with the impress method. *The Reading Teacher*, 1970, *24*(2), 112–114.

Langford, K., Slade, K., & Barnett, A. Examination of impress techniques in remedial reading. *Academic Therapy*, 1974, *9*(5), 309–319.

Laurita, R. Rehearsal: A technique for improving reading comprehension. *Academic Therapy*, 1972, *7*(1), 103–111.

Rothkopf, E. Textual constraints as function of repeated reading. *Journal of Educational Psychology*, 1968, *59*(1), 20–25.

*Schneeberg, H. Listening while reading: A four-year study. *The Reading Teacher*, 1977, *30*(6), 629–635.

Reading Comprehension Problems

Question I have several students in my combined fourth/fifth grade class who have reading comprehension problems. When I have them read aloud, they can recognize most of the words, but they do not seem to understand or remember what they read. What do you suppose the source of the problem is?

Discussion The problem described here is very common. Many teachers report that they have students who can read the individual words in a passage but who have poor comprehension. Therefore, a better understanding of this problem should be very useful.

For the purpose of this discussion it is helpful to think of reading comprehension as an outcome—good comprehension is what results when the components it depends on are well developed and integrated. Among the major components that enable good reading comprehension to occur are word recognition skills, vocabulary knowledge, syntactic skills, and background knowledge. If any one of these components is not well developed, or if each is developed but not automated or well integrated, then the result is likely to be reduced comprehension. We discuss below the components and their importance for good reading comprehension.

The importance of word recognition for good comprehension has been discussed in other sections of this report (e.g., *Reading Comprehension: Nature of Reading Comprehension and Its Instruction, Developing Reading Skill: The Relationship between Decoding and Comprehension,* and *The Nature of Reading and Its Instruction: The Role of Word Recognition in Reading*). In those sections and in this section we support the position that being accurate at word recognition is not enough. Readers must also be able to recognize words rapidly with virtually no effort. Any effort that is given to word recognition leaves that much less that can be devoted to comprehension. Although it is important to spend a good deal of instructional time developing word recognition accuracy, instruction should not stop there. It is very important to take students beyond the point of accuracy—they must be able to recognize words automatically.

We speculate that many of the students who are able to recognize words but do not comprehend very well suffer from being slow and nonautomatic at word recognition. That is, by the time they read all the words in a sentence, either they have forgotten what the sentence is about or they have paid so much attention to identifying the individual words that they never get the meaning of the sentence in the first place. How can this problem be corrected? Researchers who believe that automatic word recognition is very important for good comprehension suggest that practice is the answer. They recommend that practice using easy reading materials with the specific instruction to read faster should promote rapid and automatic word recognition. Although research has not yet proven the effectiveness of these strategies, we think their validity will eventually be demonstrated. In using these strategies, it is important to remember that for any group of new words, speed and automaticity should be emphasized only after students can accurately recognize the words.

Does automatic word recognition guarantee good comprehension? Not necessarily. Some readers have inadequate vocabulary skills in addition to (or instead of) word recognition difficulties. A student who does not understand the meanings of key words in a sentence probably will not understand the sentence. If this is true for many sentences in a passage, then overall comprehension will suffer. Vocabulary is not easy to increase, especially if word recognition skills are poor. That is, good readers learn many word meanings by reading materials that contain them. However, poor readers at the elementary school level usually cannot or do not read materials where the content is advanced enough to contain unfamiliar words. We think teachers can help these poor readers by giving them direct vocabulary instruction and by reading to them from advanced materials that the poor readers cannot read themselves.

In addition to automatic word recognition and an adequate vocabulary, students must learn how to use syntax (grammatical structure) in reading sentences. Syntax governs the way words and phrases are combined to form sentences. In oral language, speakers demonstrate their knowledge of syntax by speaking with the proper phrasing, intonation, expression, and so on. These oral language components, along with nonverbal gestures, greatly aid the listener's comprehension. In the case of written language, punctuation marks, word order, and verb tenses are the only overt syntactic clues available to readers. Consequently, readers must use their knowledge of syntax to read sentences properly. If readers do not or cannot, then the meaning of combinations of words probably will be lost and comprehension will be reduced.

Some research indicates that students who seem unable to read with the proper phrasing can improve in comprehension by reading written materials that actually have been grouped into phrase and clause units. We do not know whether practice with such materials will improve reading of new ungrouped passages. But we do know that this research suggests that syntactic skill is related to comprehension.

Another kind of knowledge is important to comprehension—world knowledge. By world knowledge we mean that everything we already know is helpful in acquiring new knowledge. If we can relate new information to something we already know, then it is easier to understand and remember. Think how difficult it would be to understand an article on astrophysics without prior knowledge of the field!

World knowledge accumulates over a whole lifetime. Teachers and parents can help children accumulate world knowledge by exposing them to many varied experiences. Of course, as reading skills develop, reading itself is a tremendous source of new information and, consequently, a large contributor to an individual's world knowledge.

Although the components discussed here may not explain all reading comprehension problems, they probably account for most of them.

Summary

Many teachers are puzzled by students who are able to recognize words but still cannot comprehend what they read. Research suggests that although these students may be accurate at word recognition, slowness and nonautomaticity may be interfering with reading comprehension. Inadequate vocabulary knowledge or syntactic knowledge may also be sources of poor reading comprehension. We suggest that direct instruction in these components, varied experiences that increase world knowledge, and plenty of practice reading will go a long way toward improving reading comprehension.

Suggested Reading

Adams, M.J. *Failures to comprehend and levels of processing in reading* (Tech. Rep. No. 37). Urbana, IL: University of Illinois, Center for the Study of Reading, 1977.

Cromer, W. The difference model: A new explanation for some reading difficulties. *Journal of Educational Psychology*, 1970, *61*(6), 471–483.

*Dahl, P., & Samuels, S.J. Teaching children to read using hypothesis test strategies. *The Reading Teacher*, 1977, *30*(6), 603–606.

Eakin, S., & Douglas, V. Automatization and oral reading problems in children. *Journal of Learning Disabilities*, 1971, 4(1), 26–33.

Gibson, E.J., & Levin, H. *The psychology of reading.* Cambridge: MIT Press, 1975.

Goodman, K. Reading: A psycholinguistic guessing game. In H. Singer & R. Ruddell (Eds.), *Theoretical models and processes of reading.* Newark, DE: International Reading Association, 1976.

Katz, L., & Wicklund, D.A. Letter scanning rate for good and poor readers in grades two and six. *Journal of Educational Psychology*, 1972, *63*(4), 363–367.

*LaBerge, D., & Samuels, S.J. Toward a theory of automatic information processing in reading. *Cognitive Psychology*, 1974, *6*(2), 293–323.

Perfetti, C., & Hogaboam, T. The relationship between single word decoding and reading comprehension skill. *Journal of Educational Psychology*, 1975, *67*(4), 461–469.

Weinstein, R., & Rabinovitch, M.S. Sentence structure and retention in good and poor readers. *Journal of Educational Psychology*, 1971, *62*(1), 25–30.

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